

3.2.1

CHILDREN'S TELEVISION WORKSHOP EXPLORES THE WORLD

NOVEMBER 1992

CONTACT[®]

Dinner
IS
Served!

WHY PEOPLE
EAT INSECTS



Plus:

"Electrifying" New Cars
Odd Aussie Animals
A City Under the Sands

Lisa Frank Makes Halloween Frightening Fun!



All this Frightening Fun stuff; COLORING BOOKS, SCARY PENCILS, GHOULISH JUMBO ERASERS AND STENCILS, FRIGHTENING RINGS, MAZE PUZZLES, STICKERS, WHISTLES, TRACING SHAPES AND COOKIE CUTTERS! Remember Lisa Frank makes the very best, fun stuff just for you. Have a Happy and Safe Halloween!

SHOW YOUR MOM OR DAD,
THEY'LL LOVE THEM TOO!

HALLOWEEN™

PARTY FAVORS

Lisa Frank®

YOU GOTTA HAVE IT!™

The Quality and Value are in
the name, so is the Fun!™

Find Lisa Frank Halloween products at Food, Drug, Toy and Discount Department Stores.

© Lisa Frank Inc.

Publisher
Nina B. Link
Editor-in-Chief
Jonathan Rosenbloom
Editor
Curtis Slepian
Art Director
Al Nagy
Senior Editor
Elizabeth A. Vitton
Associate Editor
Beth Chayet
Editorial Assistant
Robert Moll
Assistant Art Director
Nadine S. Simon
Photo Editor
Jacqui Wong

.....
Director of Research/
Magazine Group
Dr. Renee Cherow-O'Leary
Research Manager
Vanessa Bing
Researcher
Julie Seyfert
.....
Director/Creative Services
Aurea Marrero
.....
Group Vice President/General
Manager
Bill Hitzig
Vice President/Finance
Julie K. Andersen
Vice President/Circulation
Kathleen O'Shaughnessy
Circulation Operations Manager
June Wick
Circulation Marketing Manager
Jane Cazzorla
Production Director
Carlos N. Crosbie
Production Manager
Carolyn Ahrens
Assistant Production Manager
Kerry Giles
.....
Advertising Director
Gail Deloit
Manager of Special Projects
Karen Siegel Gruenberg
Senior Sales Representatives
Valerie Wilpon
Laura Billings
Advertising Research Coordinator
Alecia Lane O'Neill
.....
ADVISORS
Dr. Gerald S. Lesser
Professor, Harvard Graduate
School of Education
Dr. Charles Walcott
Director, Lab. of Ornithology,
Cornell University
Dr. Jean Walker
Professor of Physics,
Cleveland State University
Dr. Charles A. Whitney
Professor of Astronomy,
Harvard University



Winner/National Magazine Award
General Excellence



Award Winner/Feature

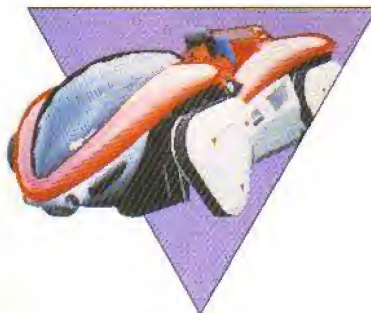
3-2-1 Contact (ISSN 1095-4106) is a publication of
the Children's Television Workshop, published ten
times during the year, mostly except for February
and August. © 1992 Children's Television
Workshop. All rights reserved. All contents owned
by the Children's Television Workshop and may not
be reprinted without permission. U.S.P.S. PSN #
000594. 3-2-1 Contact is a trademark and a ser-
vice mark of the Children's Television Workshop.
Printed in the U.S.A. Mirebre 131 November
1992. Editorial office: One Lincoln Plaza, New
York, N.Y. 10023. Send subscription orders to 3-
2-1 Contact, P.O. Box 53051, Boulder, CO 80322-
3051. POSTMASTER: Send address changes to 3-
2-1 Contact, P.O. Box 53051, Boulder, CO
80322-3051 (including label from cover of maga-
zine). Subscriptions: 1 year U.S.A. \$16.50. Canada
and other countries add \$6 GST. Payment in ad-
vance. 124708088. Circulation Second Class Mail Reg. #
9514. Second-class postage paid at New York, NY
and additional mailing offices. Bulk copy rates to
schools and other institutions available on request.



C O N T E N T S

FEATURES

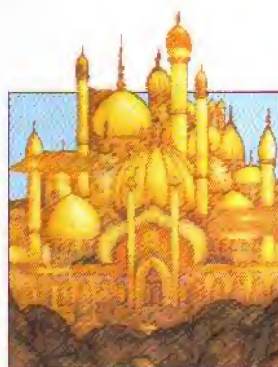
- 6** Jiminy Crickets!
They're Delicious...
and Nutritious,
Say Bug Experts
- 11** A CONTACT
Reader Poll
- 12** Charge Cars!
The "Current" News
About Electric Autos
- 16** Awesome Aussie Animals:
Where Are the World's
Wackiest Creatures?
Australia!
- 20** The Lost City of Ubar
- 36** A Ghostwriter
Scrambled Letter



12



16



20

DEPARTMENTS

- TNT Newsblasts **2**
- Any Questions? **4**
- Mail **24**
- The Time Team **25**
- Factoids **28**
- Basic Training **30**
- The Slipped Disk
Show **31**
- Extra! **38**
- Did It **40**

ON OUR COVER

Photography © Stan Fellerman

Chew on This

Chomp! Chomp! Chomp! At long last, a long-lasting chewing gum has arrived.

Scientists at a health-care company can now make a stick of gum taste tasty for up to 12 hours!

The sweet taste in most gum conks out after 15 minutes. That's because gum makers have to stir the flavor into the gum—much like chocolate is stirred into milk. You chew out the sugars soon after you pop a stick in your mouth.

But now, gum can be coated with a sticky layer of polymer, a plastic-like substance. The flavor oils cling to the polymer, which slowly releases the flavor.

Why is a health-care company making long-lasting gum? Because the gum makes medicines, as well

as flavors, last for hours. One stick could help a person take medicine that has to be slowly absorbed.

There's just one question: Can anyone *chew* that long?

Story suggested by Brian Dean, Centerville, OH.



Ripple Effect

How did the universe begin? With a bang, say some astronomers. And they think they can prove it.

One idea of how the universe began 15 billion years ago is called the "Big Bang" theory.

Here's how it goes: The universe was once no bigger than the period at the end of this sentence.

Suddenly, it exploded from a dot to a galaxy, and has been getting bigger ever since.

Now, for the first time, scientists think they can prove this theory. With the help of NASA's COBE satellite, the astronomers



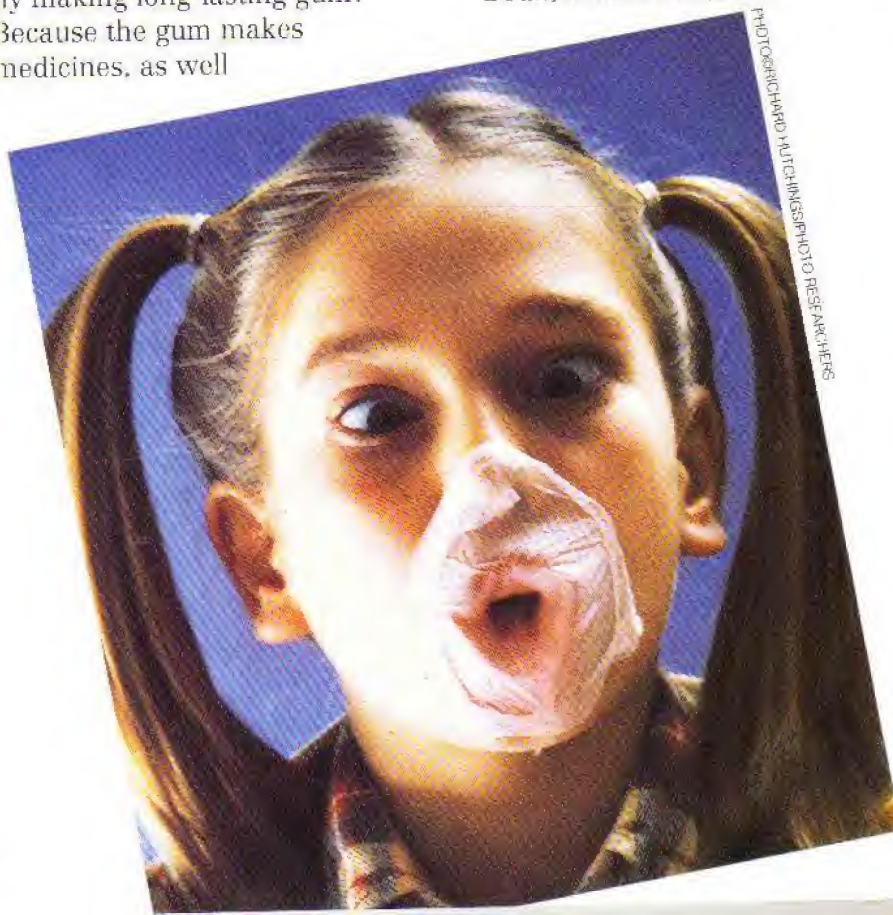
PHOTO COURTESY NASA

discovered the largest and oldest structure known: huge ripples of gas more than 500 million light years long. (One light year is six *trillion* miles.)

The scientists say the Big Bang caused these ripples. (The ripples are the pink and blue patches in the photo.) Then, over billions of years, these gases grew into galaxies, stars and other matter.

The discovery of the ripples is causing lots of waves. And for good reason, says NASA scientist John C. Mather. "What we've found may solve how the universe began."

Story suggested by Rebecca Adler, Boston MA; and Nicole Haddad, Troy, MI.



PHOTOGRAPH BY HUTCHINGS/PHOTO RESEARCHERS

Can We Talk?



PHOTO © WALT DISNEY CO. / COURTESY WALT DISNEY IMAGINEERING

It may not be your typical typewriter. But it's just the right type...for a dolphin.

Researchers at Walt Disney World's EPCOT Center have designed a giant "typewriter" for Toby and Bob, two bottlenose dolphins. With it, they hope to be able to communicate with the two animals.

The typewriter is the size of a minivan. It has 60 "keys" that are actually hollow tubes. Each tube is labeled with a different 3-D symbol. When the dolphin pokes its snout into that tube, it triggers a response.

For example, if Toby chooses symbols for "Give stick to Toby," the trainers will offer the stick. Toby can use it to open a container holding food or toys.

The trainers hope Toby and Bob will learn word symbols in a year. After that, they want to train the duo to string words together to form sentences.

So who knows? Maybe one day you'll see these dolphins in a...secretary pool!

It Had to Be Yew

What's 100 years old, is found in a forest and treats cancer? The answer: a Pacific yew tree.

Taxol, a cancer-fighting drug, is made from the bark of the Pacific yew. It takes three trees, each 100 years old, to make enough of the drug to treat one patient for a year. Problem is, there are few of the slow-growing trees left. So there's not enough taxol to treat all the patients who need it.

But now two researchers at the University of Mississippi have found a way to get taxol without killing the rare trees: Go for the trimmings!

They discovered taxol in the needles of yew shrubs, which are very common. "There are 20 million of these bushes in garden shops around the U.S.," says researcher Edward Croom. "When the plants are trimmed, the trimmings are tossed."

It turns out people were throwing away a good thing. The researchers got three times more taxol from the shrub's needles than from the same amount of tree bark. In a year, scientists hope to have enough taxol to start treating patients. Now that's *tree*-mendous news.

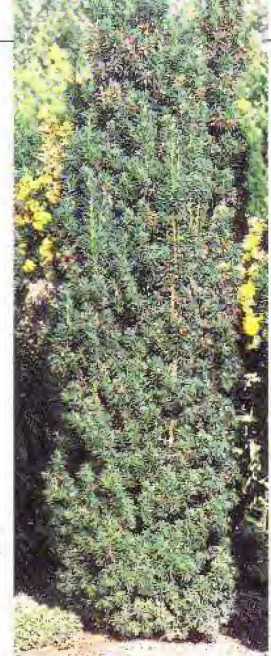


PHOTO: JAMES H. HARRIS

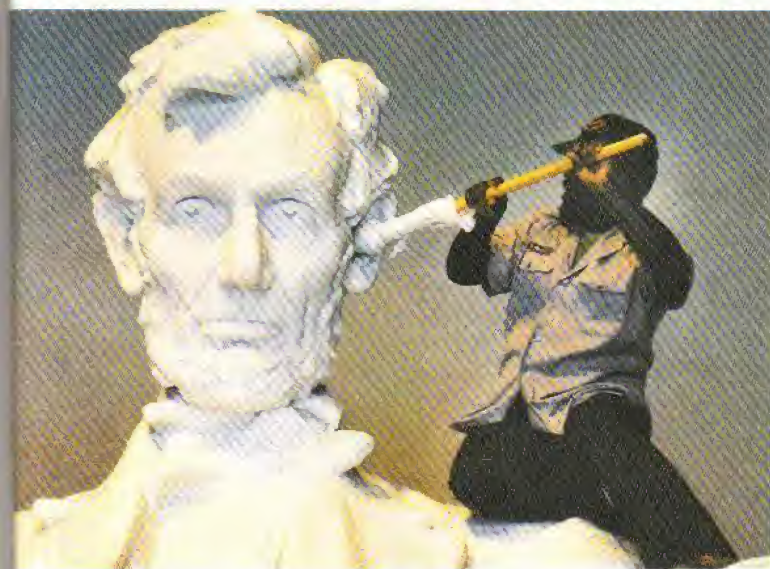


PHOTO: GUY LAWRENCE

What a Swab!

Keeping the statue of Abraham Lincoln in Washington, DC, bright *and* clean used to be tough. That's because at sunset, floodlights at the memorial attracted thousands of midges.

These small insects would smash into the statue,

becoming food for spiders. The spiders would then attract birds. Which, in turn, meant lots of bird droppings. And a big mess.

So the National Park Service decided to turn on the lights one hour past sunset. By then, the midges had called it a night.

And it worked. Midge deaths dropped by 90 percent. So fewer spiders and birds dropped by. What a load off Abe's back!



So What's New?

You tell us and you'll get a nifty CONTACT T-shirt—if we print your story. Send us any science story from the news that you think our readers would like to know about. (Be sure to tell us your T-shirt size and where you heard the story.)

Send to:
TNT
3-2-1 CONTACT
Magazine
1 Lincoln Plaza
New York, NY 10023

ANY QUESTIONS?

By Christina Wilsdon

WHAT

IS QUICKSAND?

You've probably seen quicksand in movies, swallowing people whole while making "glub, glub" noises. Scary stuff!

Quicksand is very, very wet sand that's soaked with more water than it can possibly hold. It forms in watery areas where the sand is made of tiny grains.

Water prevents the grains from gripping or clumping together. So the quicksand is more like a liquid than a solid. It can't support heavy weights as a solid surface does.

Is quicksand dangerous? It is if you try to get out by struggling. If you struggle, you create suction. And you get sucked in.

To get out of quicksand, stop struggling. Then lie on your back. Stretch out so your arms and legs are floating on the quicksand. Then roll carefully toward firm ground.

You'll be fine and dandy—and sandy!

Question sent in by Ginger Ford, San Marcos, TX.

WHAT

CAUSES BAD BREATH?

Everybody knows what bad breath causes—it causes people to back away from you! But there is more than one reason for bad breath.

Most of the time, bad breath is caused by bacteria breaking down food particles left in the mouth. The bacteria give off smelly gases as they digest the food.

Bad breath can also be caused by what you eat. Coffee and garlic both leave a strong scent behind. Smoking causes bad breath. And sometimes, bad breath is a sign of something wrong, like a stomach problem or decaying teeth.

Most of the time, though, bad breath is just embarrassing. But getting rid of ordinary bad breath is easy. Just crunch an apple, chew a sprig of parsley or brush your teeth.

If you've ever been breathed on by a dog, you know that meat-eating animals often have bad breath. One actor whose co-star was a lion says the thing he remembers most was the animal's terrible breath!

Question sent in by John Thompson, Woodstock, VT.



HOW

DO LIZARDS CHANGE COLOR?

Some lizards are wizards when it comes to changing colors. And among them, the chameleon (say: *kah-ME-lee-on*) is the champ.

Lizards that change color have layers of skin that hold color, or pigments. These layers are called cells. Each cell contains a color: yellow, green, red, orange, purple, blue or white.

The color cells can grow and shrink. Swollen cells add color. The color in shrunken cells gets hidden.

Scientists don't know exactly how a lizard's brain signals its skin to produce patterns and colors. They do know that a lizard doesn't turn green because it knows it's on a green leaf. Its skin changes color to match its background because it reacts to light and temperature.

Lizards also change color depending on how they feel. Many males turn bright colors when they meet a female—or when another male steps onto their territory. A sick chameleon may turn black. And angry chameleons flash every color they've got!

Question sent in by James Salois, Millbury, MA.



WHAT

CAUSES A SONIC BOOM?

The loud "boom" of a supersonic jet happens when it travels faster than the speed of sound.

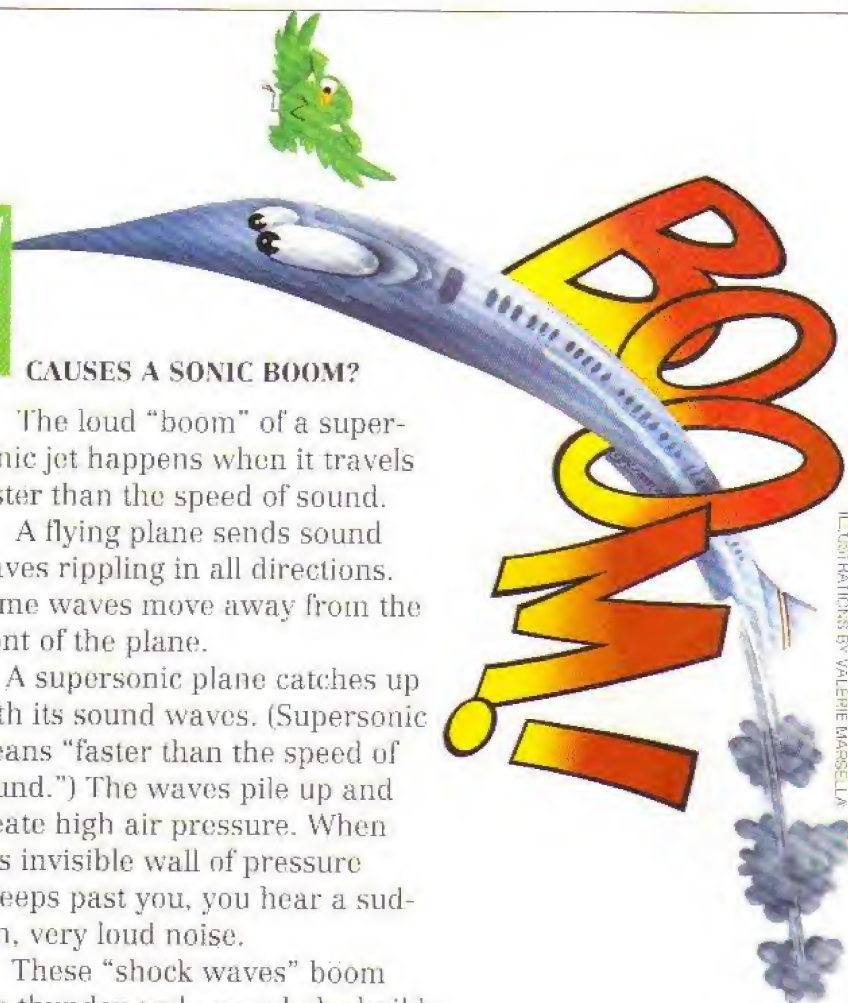
A flying plane sends sound waves rippling in all directions. Some waves move away from the front of the plane.

A supersonic plane catches up with its sound waves. (Supersonic means "faster than the speed of sound.") The waves pile up and create high air pressure. When this invisible wall of pressure sweeps past you, you hear a sudden, very loud noise.

These "shock waves" boom like thunder and even shake buildings. Many parts of the plane form shock waves, but usually we hear the ones made by the nose and the tail. Sometimes the two shock waves arrive so close together, they sound like one.

But if you could ride on the tip of a plane's nose, you wouldn't hear a thing: The plane flies in an area of complete quiet, because it's flying faster than its own sound waves!

Question sent in by Nick Genthner, Gulf Breeze, FL.



ILLUSTRATIONS BY VALERIE MARSELLA

Do you have a question
that no one seems able to answer?
Why not ask us? Write to:
Any Questions? 3-2-1
Contact, P.O. Box 40, Vernon,
NJ 07462

JIMINY C



**THEY'RE
DELICIOUS
&
NUTRITIOUS,
SAY BUG
EXPERTS**

By Elizabeth Vinton



“Waiter!
There's a bug in my soup!”
Sounds like a joke, right?
Wrong. At least it doesn't to
Louis Sorkin. He's an insect
expert, or entomologist. And he
thinks there's nothing funny
about eating bugs.

Take honey bees, for example.
“Everybody eats honey, but
nobody ever thinks of eating
bees,” Sorkin complains.

Nobody, that is, except Sorkin
and a bunch of entomologists.

This past year, they chowed
down on baby bees, mealworm
dip, crunchy crickets and other
six-legged dishes to celebrate the
New York Entomological Soci-
ety's 100th birthday.

Entomologists aren't the only
insect lovers around, though.
Lots of people eat bugs.

“Insects are eaten every-
where—all over Asia, Africa,
South America and Mexico,” Dr.
Gene DeFoliart told CONTACT.
An entomologist, he also publish-
es “The Food Insects Newsletter.”

Crunch, Then Munch

So far, entomologists know of
about 500 insect species that are
used as food somewhere in the
world. For example, people in
Asia cook and eat giant water
bugs—just as Americans do lob-
ster. (How giant are these bugs?
They eat small fish!)

“You munch the abdomen
first,” Dr. Michael Burgett told
CONTACT. He is in charge of the
honey bee lab at Oregon State
University. “It's kind of gooey
and has a strong taste—which
can give you a terrible case of
bad breath!”

Mopane worms, on the other

RICKETS!



PHOTO: PETER M. HILL


hand, are easier to stomach, says Burgett. These worms are really caterpillars that will one day change into huge moths. People pluck the caterpillars from the leaves of the mopane tree. Their intestines are squeezed out and the caterpillars are then fried, salted and popped right in the mouth. Yum!

But why would anyone want

to eat bugs? "Why wouldn't they?" says Burgett. "Bugs are tasty."

How do they taste? "It depends on the bug," Sorkin answers. "They all taste different. Some taste nutty, like walnuts. Some taste like shrimp. Some taste meaty, but I can't exactly tell you which meat!"

Everyone has a favorite food, such as pizza or tacos. And so do insect eaters.

"One of my favorites is the wax moth larva," says Dr. DeFoliart. "It's an inch-long caterpillar. 

What's the plate of the day?

Take your pick: spaghetti

a la mealworms, flying bed-

bugs and salsa on tortillas or

chewy, gooey bug pizza!





**"I TOLD
MYSELF, 'YOU
WILL CHEW
THAT LEG ONCE
IT STOPS
WIGGLING!'"**

Drop it into a deep-fat fryer for 40 seconds, and it pops like corn! It tastes a lot like bacon."

Honey pot ants on toast are also a tasty treat. Just like bees, honey pot ants make honey. They store the honey in their stomachs, which swell up as big as small grapes.

"You can take the ant, crush its head and then pop its stomach onto a piece of toast," insect expert Ray Mendez told CONTACT. "It tastes even sweeter than honey. Kids love it. When they try the ants, they always beg for more."

A Bug a Day Keeps the Doc Away!

Bugs not only taste good, they're good for you. "Insects are high in protein—as good or better than beef, chicken or fish," Dr. DeFoliart claims. "Many people in Zaire, Africa, for example, get half their animal protein from eating bugs."

Plus, insects are high in vitamins and minerals. A meal of 20 dried caterpillars supplies the daily requirements for calcium, phosphorus, riboflavin and iron!

Bugs won't be the next diet food, though. Many, such as beetle grubs, caterpillars and termites, are full of fat and calories.

"We're not looking for fat and calories in this country," DeFoliart admits. "But in places where malnutrition is a problem, people need more fats in their diets. High-fat insects are high-energy foods."

Because of poverty in some countries, many people can't afford fish or meat. So eating bugs makes sense: People don't need expensive machinery, fertilizers, insecticides or rich soil to harvest them.

And bugs are easy to harvest—at least the ones that travel in huge groups. "In Africa, people wait until nightfall to gather swarms of locusts," DeFoliart says. "The locusts are too cold to fly, so it's easy to collect them."

Dinner Is Served

People have been eating bugs for many thousands of years. "Cave people ate bugs," Dr. Burgett says. "We have found 30,000-year-old insect skeletons in petrified human remains."

But not just primitive people or people in underdeveloped areas eat insects. In Colombia, a nation in South America, winged leaf-cutter ants are sold as treats in movie theaters. Moviegoers buy them by the bag—just like popcorn! Japanese insect farmers harvest wasps by stunning them in their underground nests with firecrackers. The wasps are quickly cooked, canned and then sold.

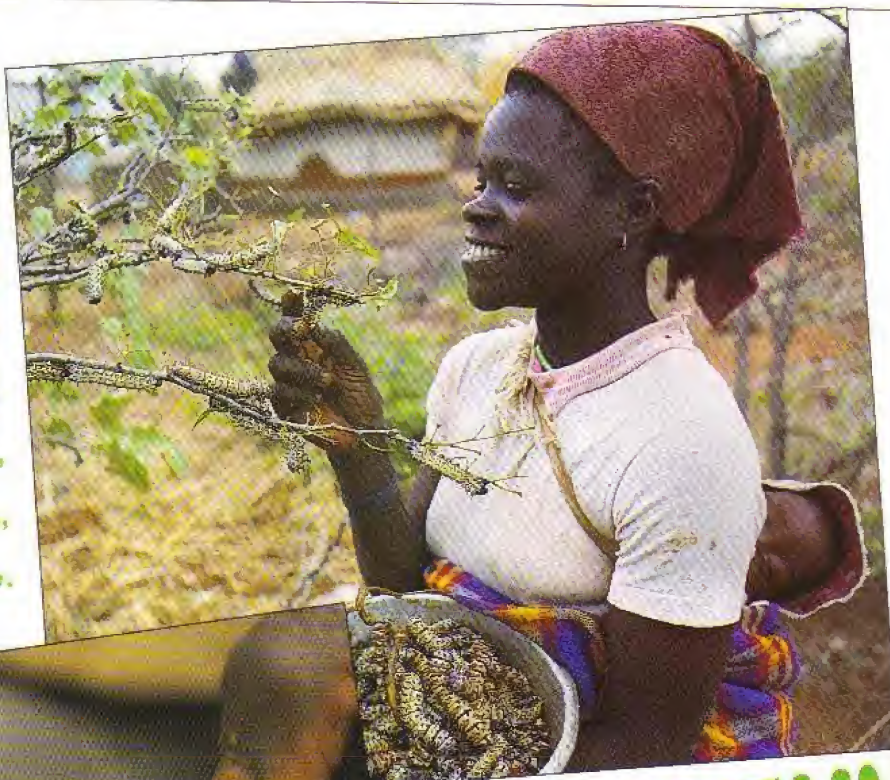
Slice them, dice them, roast them or boil them, insects are cooked in a variety of ways. "Just like you take the bones out of a chicken, you peel off the hard parts—the wing covers, head and legs—of a bug," Dr. Robert Kok told CONTACT. He is a researcher at McGill University in Canada. "You just want to



PHOTO © PETER MENZEL

PICK 'EM!

In just one hour, this woman can pick 40 pounds of wriggling caterpillars, called mopane worms, to fry, boil or stew.



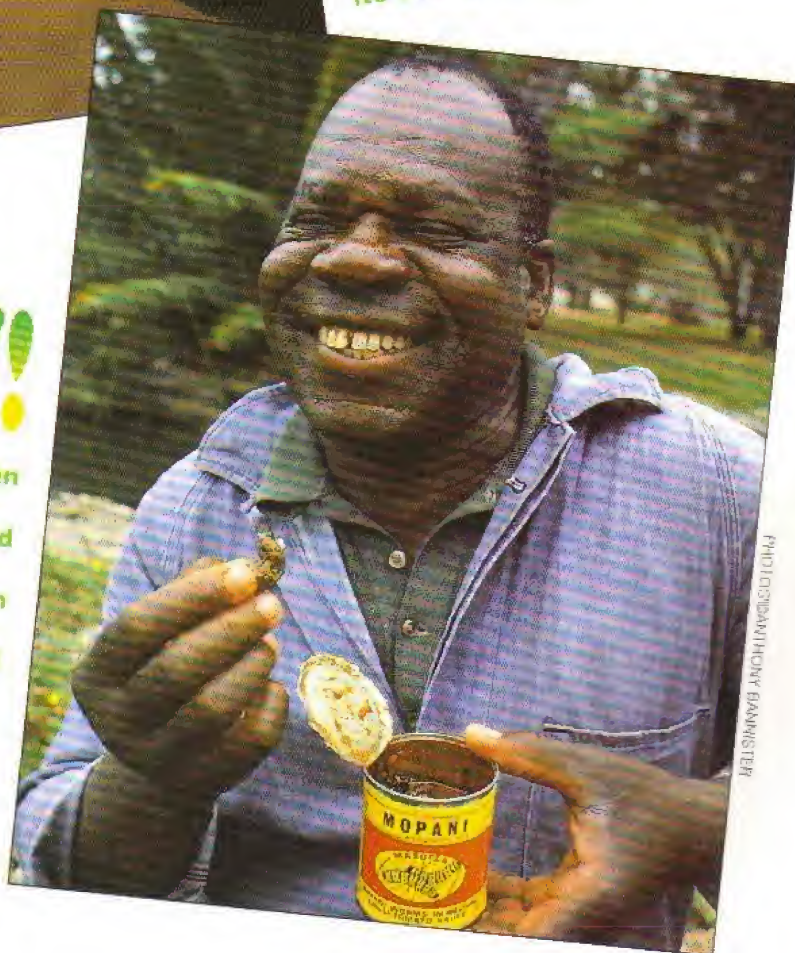
SQUISH 'EM!

Before gobbling down a mopane worm, you have to squeeze out its smelly intestines.



EAT 'EM!

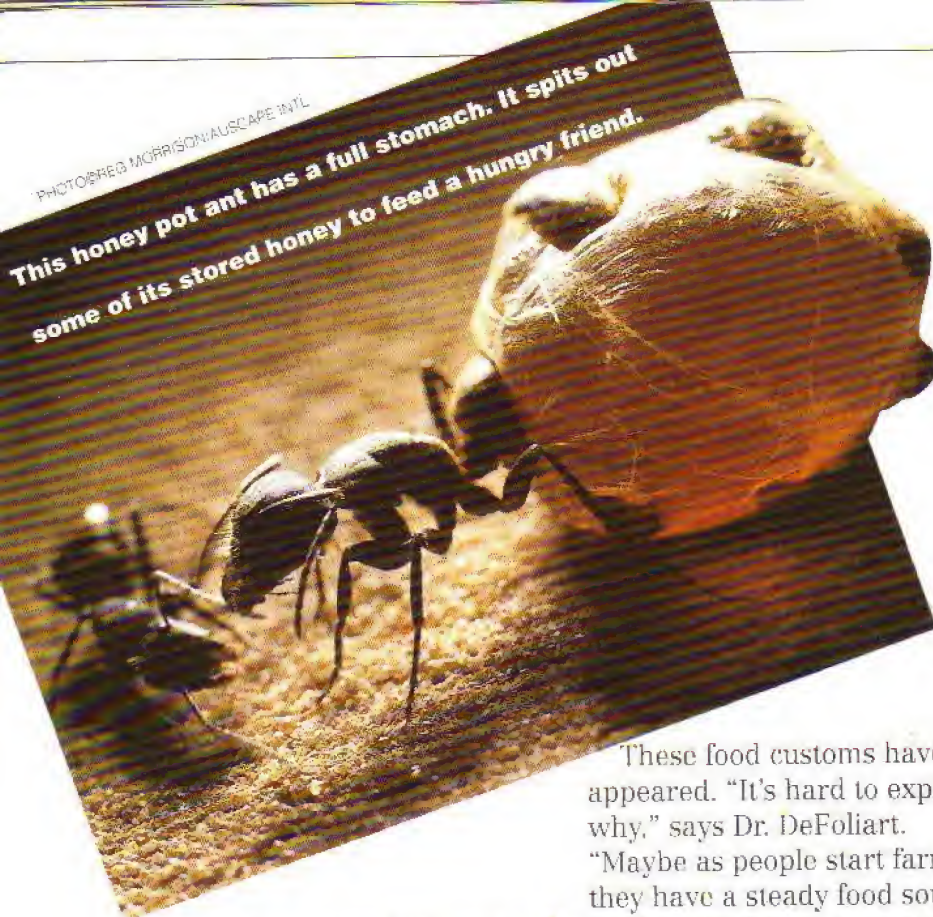
Thanks to a South African food company, all you need is a can opener to snack on mopane worms!



PHOTOGRAPHY BY BANNISTER

PHOTO: REG MORRISON/NAUSCAPE INTL

This honey pot ant has a full stomach. It spits out some of its stored honey to feed a hungry friend.



eat the part that's nice." If insects aren't dried out, they have to be cooked or eaten when alive. Otherwise, they spoil quickly.

What insects are safe to eat? "Never eat any bugs without checking first with somebody who knows insects," DeFoliart warns. "For instance, the brightly colored ones are often poisonous."

Ooh! Ick! Bugs!

If bugs are so tasty and nutritious, why aren't they a big hit in North America and Europe?

"Long ago, they were," DeFoliart answers. "The ancient Greeks cooked cicadas (say: *SUH-kay-duhs*). And the Romans loved wood-boring beetles. They would place them in flour and store them alive."

American Indian tribes on the Plains also had a taste for bugs. They ate grasshoppers, crickets and caterpillars. They would drive insect swarms into trenches filled with grass and then set the trenches on fire. This would kill the bugs and roast them at the same time.

These food customs have disappeared. "It's hard to explain why," says Dr. DeFoliart. "Maybe as people start farming, they have a steady food source. So they don't have to search for food."

But that still doesn't explain why lots of people get grossed out just *thinking* about eating bugs. "In China, I ate a giant diving beetle," Dr. Kok remembers. "This four-inch-long bug was waving its head and its antennae. I bit into it. But I did

have to tell myself, 'You, stomach, you will stay under control. You will chew that leg once it stops wiggling!'"

People also think bugs are dirty. "The minute you mention insect-eating, someone thinks of cockroaches!" DeFoliart exclaims. "Nobody eats cockroaches. They're not clean. But what's so dirty about a bee? We already eat honey."

It's all what you're used to, adds Dr. Kok. "Your parents told you not to eat bugs. But they may have given you the thumbs-up sign for hamburgers. Many people in India would be sickened by the idea of eating beef."

But whether or not you squirm at the thought of eating bugs isn't important, Dr. DeFoliart emphasizes. He thinks it's important that we don't force our food values on other people.

"We're not trying to convince people that they should eat insects," he says. "But we need to be aware that insects are important as food elsewhere in the world—particularly in places where people would otherwise go hungry." ♦

WHAT'S FOR DINNER?

Eating bugs may freak you out, but did you know that...

- Many people in Asia are grossed out by the thought of drinking milk.
- In France, about one in three people eat horsemeat. Nearly 3,000 French butcher shops specialize in horsemeat.
- During the rainy season, people in Thailand eat as much as a pound of frogs a week.
- Hindus in India consider the cow sacred, so they don't eat beef. Many Jews and Muslims avoid pork.
- In China, people have long raised dogs for meat. In one restaurant alone in Beijing, about 30 dogs are cooked and served each day.
- Groups of people worldwide eat rats.

Answer These Questions... and help us get to know you better!

We want to know some stuff about you and about what you're thinking. It'll help us make CONTACT a better magazine. So please answer the questions on this page and send it to us.

1 Are you a girl or a boy? (circle one)

girl boy

2 How old are you? _____

3 Do you have any pets? (circle one)

yes no

If so, what do you have?

4 Do you live in the suburbs, the city or the country? (circle one)

suburbs city country

5 Do you have a computer at home? (circle one)

yes no

If so, what kind is it?

6 What is your favorite:

Food _____

Sport that you play _____

TV show _____

Subject in school _____

Career _____

7 Tell us something special about you: _____

8 Why do you read 3-2-1 CONTACT?

9 What's your favorite thing about 3-2-1 CONTACT?

Wait! You're almost finished. Just fill out the information below—and thanks for taking the time to complete this poll and mailing it to us.

Name _____

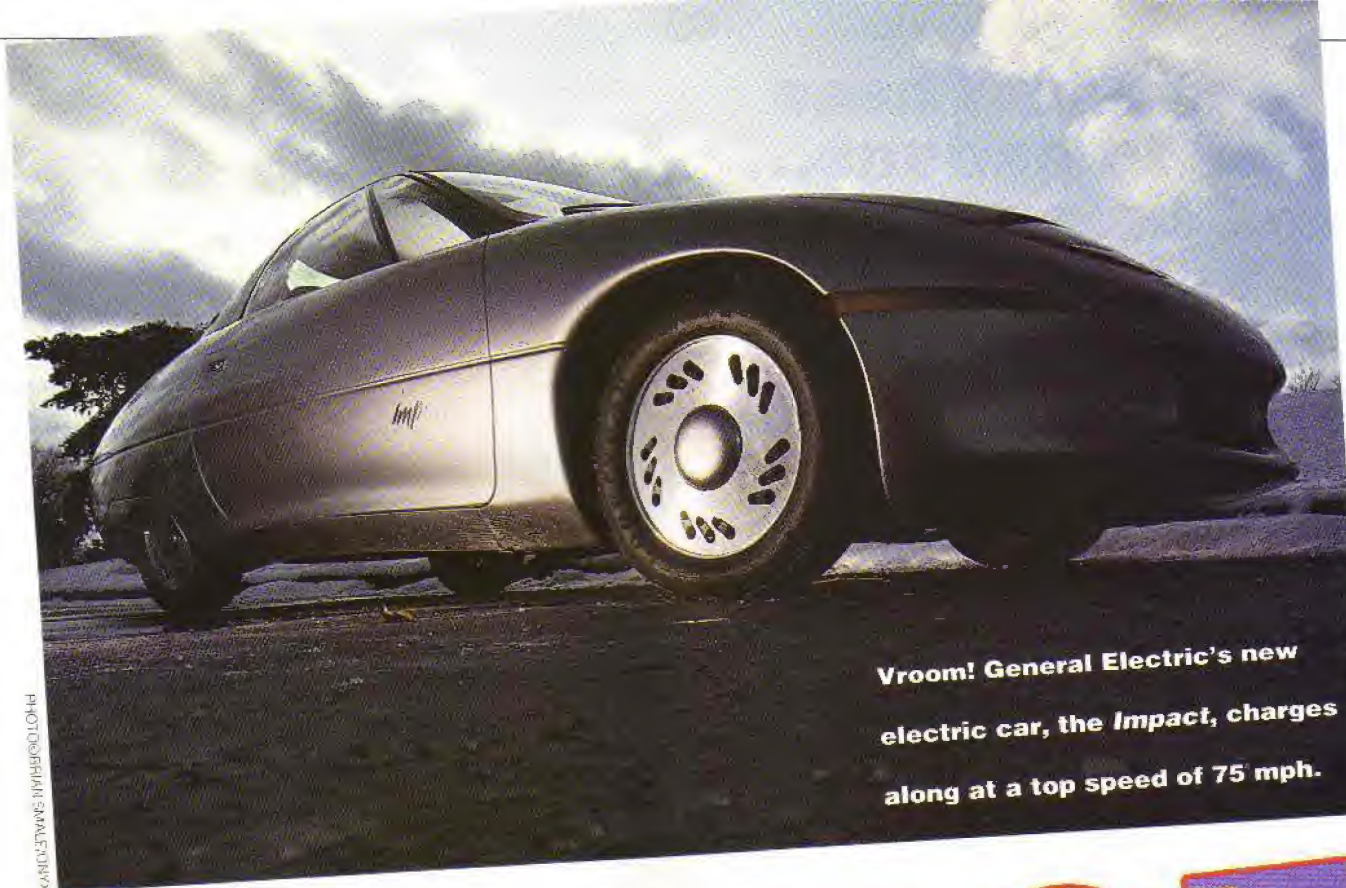
Street Address _____

City _____ State _____ Zip Code _____

Phone Number (____) _____ - _____

Mail this page to:
All About You
3-2-1 CONTACT
P.O. Box 40
Vernon, NJ
07462

**Send us
your completed
poll and you may be
one of 20 people to
win a CONTACT T-
shirt in a random
drawing!**



Vroom! General Electric's new electric car, the *Impact*, charges along at a top speed of 75 mph.

CHARGE

What looks like a spaceship on wheels, zips along "sunny side up" and is a smog buster? The answer: *Sol Survivor II*, a solar-charged electric car!

John Farwell and Eric Traffic, two students at Conval High School in Peterborough, NH, built it. They also got a charge driving it—right across the finish line in the 1992 Tour de Sol road race.

The 250-mile, five-day race is not your typical road rally. Only electric and solar cars compete in the American Tour de Sol ("sol" is the Latin word for sun). This year, the "solar rollers" hit the road, racing from Albany, NY, to Boston, MA.

Whirring along at a top speed of 58 mph, *Sol Survivor II* won first place. The charged-up car has 24 solar panels that fold upward to catch the sun's rays. The panels change the sunlight into electric current, which is stored in a battery. And

best of all, the battery-powered car doesn't pollute.

"Electric cars are definitely an answer to our air pollution problems," Tour de Sol winner John Farwell told CONTACT. "I think we'll be seeing lots of electric cars within the next five years. By then, they'll be as good as any other cars on the road."

Out of Gas

And maybe even better. Electric cars have many advantages over gasoline-powered ones, says John Ross. He's a professor of chemistry at Stanford University in Palo Alto, CA. He told CONTACT, "They don't pollute, they are quiet and they are cheaper to run."

Since an electric car is powered by batteries, it doesn't burn gasoline for fuel. And that means it won't spew out chemicals that pollute the air.

But the cars cause pollution indirectly, Ross admits. "The more electric cars there are," he explains, "the more electricity is needed to recharge them. So power plants will be making more air pollution." But electric cars still cause

less smog than gasoline-powered cars.

Another plus: No noise pollution. Electric cars are so quiet, it's almost impossible to know they've been turned on. In fact, car companies may make engines noisier so people don't accidentally start at full speed, thinking that the engine is off!

Regular cars need to be filled with gasoline when their tanks run dry. But when the batteries in an electric car run down, drivers recharge them. And it's simple to do: Just plug them into a wall socket for several hours!

"It costs about the same as one gallon of gas to recharge the batteries," Ross exclaims. "That's a big savings."

Zoom! Zoom!

Many states and cities are getting all charged up about electric cars. Not to save gas money, but

to obey clean air rules. California has already passed a law saying that by the year 2003, 10 percent of all new cars have to be pollution-free. The only cars that meet this rule are battery powered.

Other states, such as Massachusetts and New York, have passed similar laws. Some cities even plan to install electric-car battery chargers at parking meters to make recharging easy.

Because of this, almost every major car company is getting in gear to make electric cars. For example, Chrysler is rolling out a minivan that reaches a top speed of 65 mph. Problem is, it must be recharged every 100 miles. On the other hand, BMW is working on *E2*, a four-seater car that will go 160 miles between overnight recharges. 🚗

CARS!

THE "CURRENT" NEWS ABOUT ELECTRIC AUTOS

By Brianna Politzer



Sol Survivor II is one hot car! When the 24 solar panels are folded up, hundreds of solar cells recharge the car's battery.

PHOTO COURTESY AMERICAN TOUR DE SOL

But *E2* won't be ready for three or four years.

General Motors' electric car, the *Impact*, will hit the roads in two years. And it's just as fast as some gas-powered sports cars. It can go from a full stop to 60 mph in eight seconds!

The two-seater has lots of power because "it's shaped like a raindrop on its side," Jean Crocker told CONTACT. She works for General Motors. "It has very smooth curves so there is little air resistance. The less resistance from the air, the less energy it takes for the car to move forward. That's especially important with electric vehicles, because batteries don't provide as much power as gasoline."

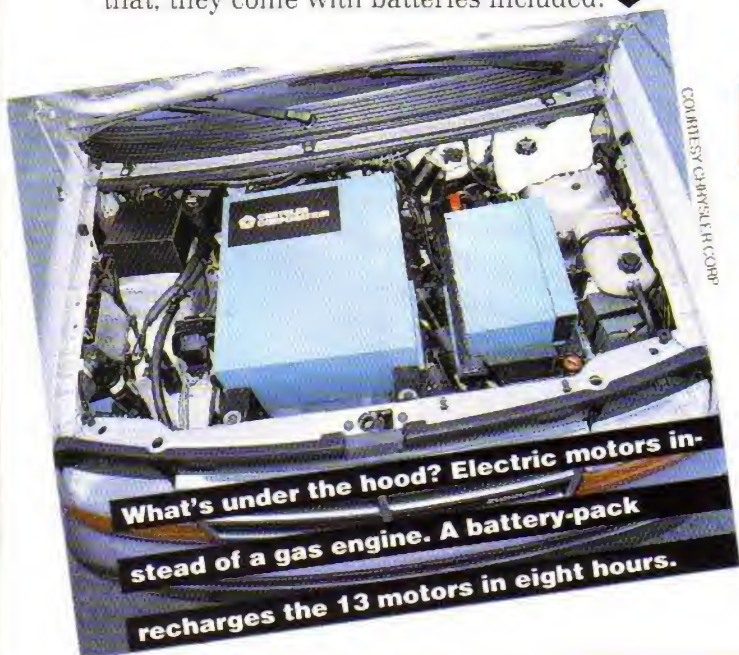
Power Shortage?

Even though everyone is plugging for electric cars, they still have miles to go before they'll replace gasoline-powered ones. First, even the best battery-powered cars travel fewer than 200 miles before the batteries run down. (Some cars go more than 600 miles on a tank of gas.)

Also, the batteries must be plugged into a charger for two to eight hours. So electric cars aren't very good for long trips. Battery companies are now working to make better batteries that can go the distance.

Another problem is that electric plants may not be able to produce enough energy to power a country full of electric cars. And the first electric cars will be very expensive—at least \$25,000 each.

Even so, these electric cars are a start. "People are very concerned about the environment," Jean Crocker points out. "And electric cars are better for the environment." Not only that, they come with batteries included! ♦



W
A
C
K
Y
W
H
E
E
L
S

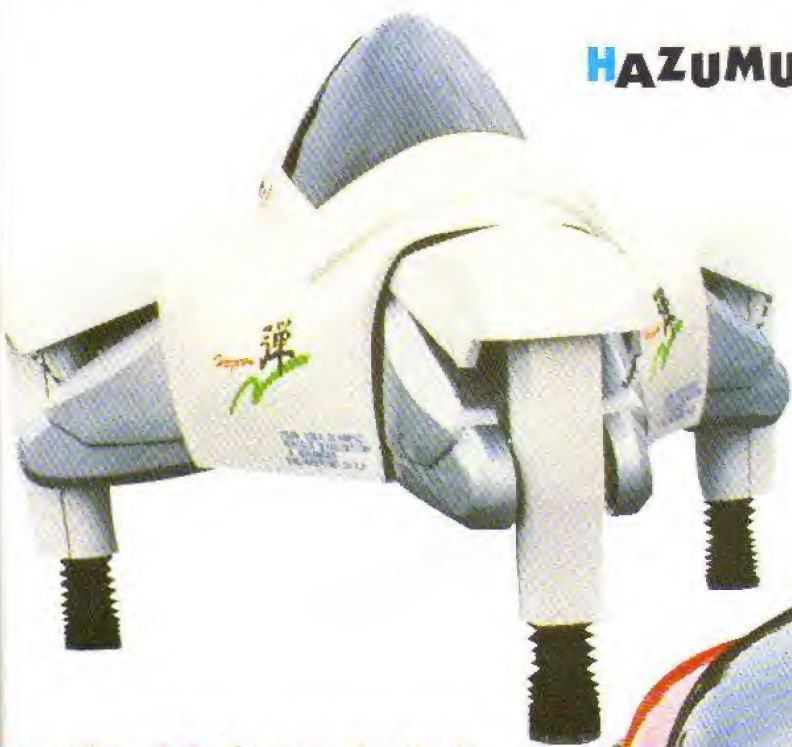
If you think electric cars are a wild idea, check out a car that bounces up and down. Or how about one that rolls like an egg?

Welcome to Toyota's Idea Olympics. Each year, car engineers at the Toyota company in Japan let their imaginations run wild. They compete against each other to think up the wackiest set of wheels around. Here are just a few of these dream machines:



▶ This car is really on a roll. As it spins forward, it wobbles from side to side. But don't worry. The driver in this "eggroll" can't get scrambled.





Boing! Boing! Boing! Accordion-like springs and air pistons give the driver something to jump up and down about.

Who says a wheel has to be round? Not this bug. And these weird wheels really get things turned around: As the car moves forward, the wheels go backwards!



THE DELTA BEETLE

◀ Eat your heart out, Michael Jackson. When both levers are forward, it moves forward. When both levers are backward, it moves backward. And when one lever is forward and one back, it spins!

THE EASY ROLLER



There's something fishy about this machine: It only moves as fast as the person on it swims. As soon as the swimmer's arms get going, motion detectors start the electric motor. The faster the arms go, the faster the motor goes. Glub! Glub!

PHOTOS COURTESY TOYOTA MOTOR CORP.

AWESOME AUSSIE ANIMALS

WHERE ARE THE WORLD'S WACKIEST CREATURES?

AUSTRALIA!



PHOTO: JEFFREY P. FETTER/ALAMY

By Beth Chayet

Weird. That's how some people describe the animals of Australia. Many "Aussie" animals aren't found anywhere else in the world. Especially odd is a kind of mammal known as a marsupial. A marsupial mom nurses and carries her baby in a pouch on her body.

"At one time, marsupials used to be scattered throughout most of the world," John Kirsch told CONTACT. He is a scientist who studies marsupials. "But they went extinct after the continents drifted apart."

Australia was once joined together with Africa, South America, India and Antarctica. This giant

land mass was called Gondwanaland (say: *gone-WANNA-land*). Then, over millions of years, Gondwanaland broke apart. So Australia became an island and drifted away from the rest of the world.

"Because Australia was floating in the middle of nowhere, marsupials couldn't go to other parts of the world," says Kirsch. "And mammals from other parts of the world couldn't get to Australia."

Of course, marsupials aren't the only strange animals left adrift in Australia. Take a look at some of these unusual creatures that were stranded in the land "down under."



PHOTO: DAVID WATTS/STOCK PHOTO & AP/WIDEWORLD

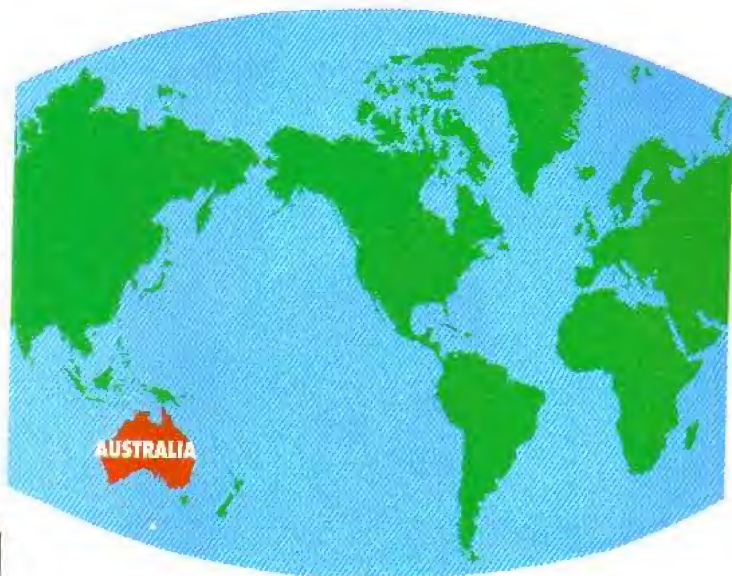
One of a Kind

Is it a bird, a reptile or a mammal?

The puzzling platypus (say: *PLAT-uh-puss*), found only in Australia, is all three. It has a bill and webbed feet like a duck, shoulder bones like a reptile and a furry body like a mammal. Like most mammals, a mother platypus nurses her babies. But unlike most mammals, mom lays eggs instead of giving birth to live young.

Platypuses live in burrows along rivers. At night, they search for food underwater. Tiny holes in their bill help them “see” electrical currents made by moving prey.

A platypus looks cuddly, but beware! When feeling threatened, male platypuses can inject poison from a sharp spur hidden on the inside of each hind leg. This really helps them get their point across!



Ring Around the Collar If looks could kill, the frilled lizard would be deadly. When an enemy approaches, the three-foot-long lizard opens its mouth and unfolds a giant collar. This makes it seem much larger and scarier to a foe. The lizard stays still until its foe has gone. Then it hisses, beats the ground with its tail and walks off, with its collar standing tall.

PHOTO: ESTHER BEATON/ALSCAPE INTL



Born to Dig

A wombat isn't a bat. In fact, it can't even fly. These tailless creatures spend lots of time digging tunnels in the ground to live in. At night, they come out to eat grass, leaves and roots. Like other marsupials, a mother wombat carries her baby in a pouch. But the pouch opens in such a way that it can't fill up with dirt while mom digs. How's that for keeping baby's room clean? 🦘

Sleepy Heads To catch a cuscus (say: *KUSS-kuss*), you don't have to run very fast. These monkey-like marsupials are slowpokes. During the day cuscuses hardly move at all—they snooze in trees. At night, they prowl around looking for fruit and leaves. With its yellow-rimmed eyes, yellow nose and long hairless tail, the cuscus is quite a sight. An even more amazing sight is the babies hidden inside its pouch—there can be up to four at a time!



PHOTO © JEAN-PAUL FERRERO/AUSCAPE INTL



PHOTO © MICHAEL HUSUPHOTO RESEARCHERS

Wattle You Know? This cassowary (say: *KASS-uh-were-e*) looks like it's wearing a blue helmet. A brightly colored piece of wrinkly skin, called a wattle, hangs from its face. Cassowaries can run up to 30 mph. They also walk, swim and leap. But what they can't do is fly. These big birds grow up to five feet tall and can weigh 200 pounds! Female cassowaries lay giant, green eggs. So maybe there *is* such a thing as green eggs and ham!

Mixed-up Mammal You might say an echidna (say: eye-KID-nuh) is quite nose-y: Its nostrils and mouth are at the end of a very long snout. Since an echidna has no teeth, it uses its long tongue and sticky saliva to slurp up insects. But what's unusual about this mammal is that it lays eggs. (All other mammals—except the platypus—give birth to live young.) The egg is kept inside a pouch in the female's stomach until it's ready to hatch.

An echidna looks a little like a "Koosh Ball." But its sharp-tipped spines would make you think twice before picking it up to play catch!



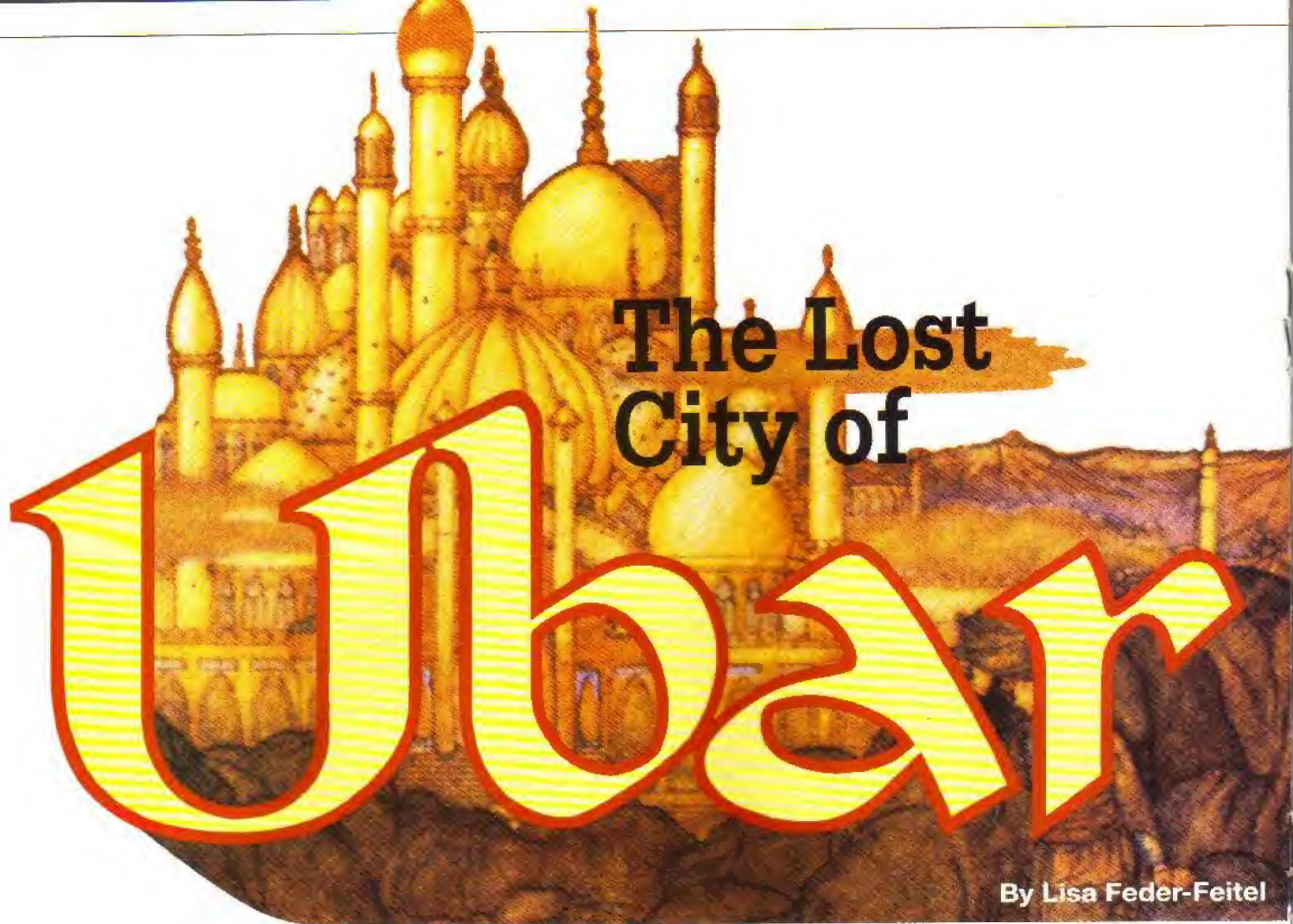
PHOTO: KATHIE ATKINSON/AUSCAPE INTL



Dog Gone Wild A dingo is a relative to a dog. But it's *not* man's best friend. Dingoes don't bark, they howl. At night, they hunt in packs for small animals, and kill thousands of sheep and cattle each year. To protect their animals, Australian farmers sometimes poison or shoot dingoes.

Thousands of years ago, the native people of Australia, called Aborigines (say: ab-uh-RIDGE-uh-knees), brought tame dingoes with them from Asia. Some escaped and *really* went wild. ♦

PHOTO: JEAN-PAUL FERRERO/AUSCAPE INTL

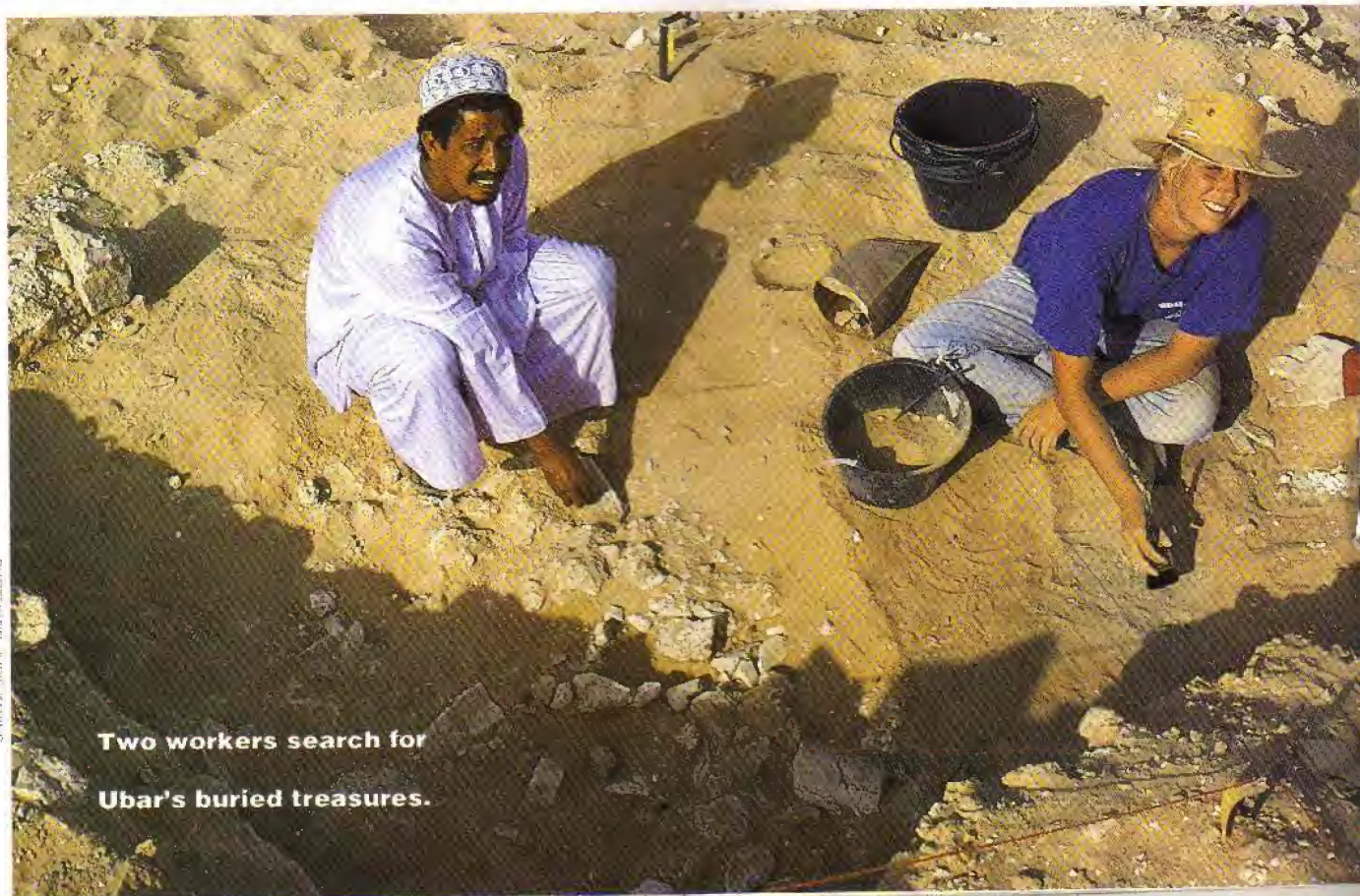


The Lost City of

Ubar

By Lisa Feder-Feitel

COURTESY NICHOLAS CLAPP



PHOTOGRAPH BY JAMES ZAMMIS

Two workers search for
Ubar's buried treasures.

Long ago and far away, there lived a man with a dream. This man was a merchant named Shaddad Ibn Ad. He dreamed of building a magnificent marketplace in the middle of an Arabian desert. After a time, his dream city was built. Its shining towers soared toward the desert sun. The city walls were made of gold and covered with jewels. From far and near, traders went there to make their fortunes. Yet, one day this glittering city vanished, leaving no trace in the desert sands.

Is this just a fairy tale? Or did this city actually exist? Some people say it did exist. The city, they say, was a giant marketplace called Ubar (say: *YOU-bar*). There, men traded frankincense—a tree sap used thousands of years ago to make medicines and perfume.

What makes some people sure Ubar was real? They point to a book of ancient folktales called *The 1,001 Tales of the Arabian Nights*. Supposedly, some tales hold clues to Ubar's exact location.

There's another clue. Nearly 2,000 years ago, a Greek scientist and mapmaker named Ptolemy (say: *TOLL-uh-may*) made a map of Oman—a tiny nation in the Middle East. The map showed a place in the desert called the "Omani Marketplace." Was this Ubar?

If it was Ubar, what became of it? According to one *Arabian Nights* tale, the city became a place of cheating and greed. Finally, the story says, "Allah (the God of Islam) blotted out the road to the city."

The holy book of Islam, the *Koran*, describes how the Earth swallowed up "the city of tow-

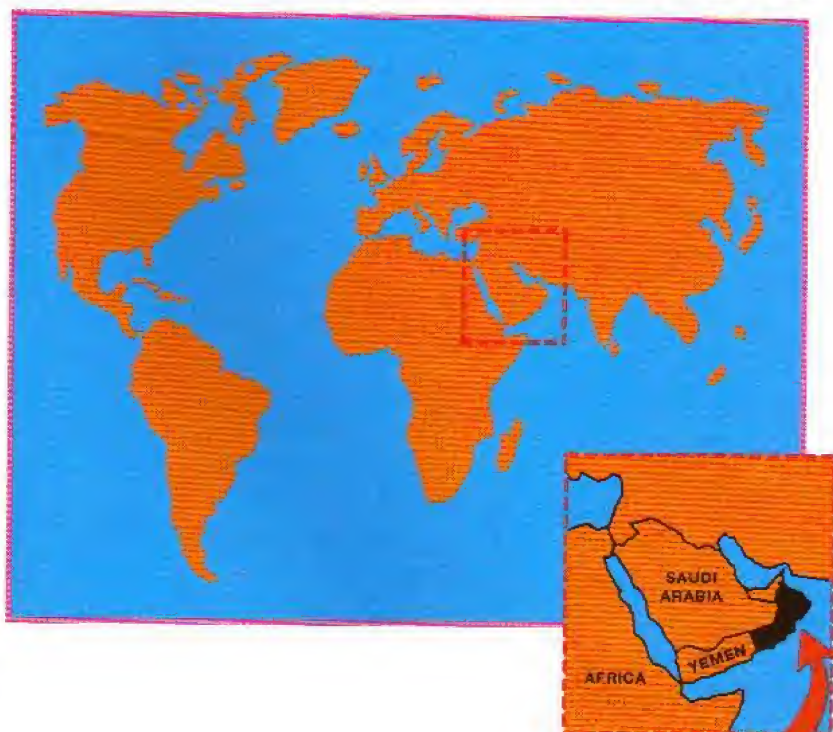
ers." Ever since then, warns an Arabian saying, "Anyone who finds Ubar will go crazy."

Space Age Maps

But warnings didn't stop explorers and historians from seeking the ancient city. Throughout the centuries, many people have tried—and failed—to find Ubar.

And then along came a man named Nicholas Clapp. He is a filmmaker from California. In 1981, Clapp saw a mention of Ubar in an old book. After reading more history books at the library, Clapp teamed up with a lawyer, an archeologist and an explorer. Now the group had to figure out where to dig for Ubar.

The breakthrough came when Clapp remembered reading about a high-tech system called Space Imaging Radar (SIR). Carried on the back of



Oman

Searching the Oman desert for Ubar was hot work.



PHOTOGRAPH BY JAMES ZAPINS

This is Ptolemy's ancient map of Oman. In the circle is the *Omanum Emporium* (Omani Marketplace). Clapp thought this was Ubar.



PHOTO COURTESY NICHOLAS CLAPP



a space shuttle, this system used radar to peer beneath the shifting desert sands and locate ancient riverbeds.

If it could "see" the buried routes of rivers, thought Clapp, why couldn't it see ancient caravan trails that might lead to Ubar? (A caravan is a group of people, goods and animals traveling on a long journey.)

In 1984, Clapp convinced two NASA scientists to place the SIR equipment on the space shuttle *Challenger*. As the shuttle orbited above the Oman desert, it recorded images of the region.

At the Jet Propulsion Laboratory at Pasadena, CA, Ronald Blom helped collect the SIR pictures taken from 250 miles in space. Blom checked his pictures against pictures from French and U.S. satellites. Then he combined the data and used computers to bring out the details of the photos.

"Once you collect the images," says Blom, "it's like putting together an invisible road map. On the ground, you would walk over it without knowing."

What the photos showed was an incredible map of white lines, some as deep as 600 feet below the desert sands. The lines were roads made thousands of years ago by caravans traveling by camel.

Figuring that some of these caravan roads led to Ubar, Clapp and his team were ready to go to Oman.

Hitting Pay Dirt

Before Clapp got there, he had half-hoped he might run into some of Ubar's ruins sticking out of the sand. But finding the city wasn't that easy. During the summer of 1991, he and his 40 helpers dug at 35 different sites. The only things they found were camel spiders, giant

ticks and deadly snakes.

Just before Thanksgiving, says Clapp, "We were within a whisker of total failure."

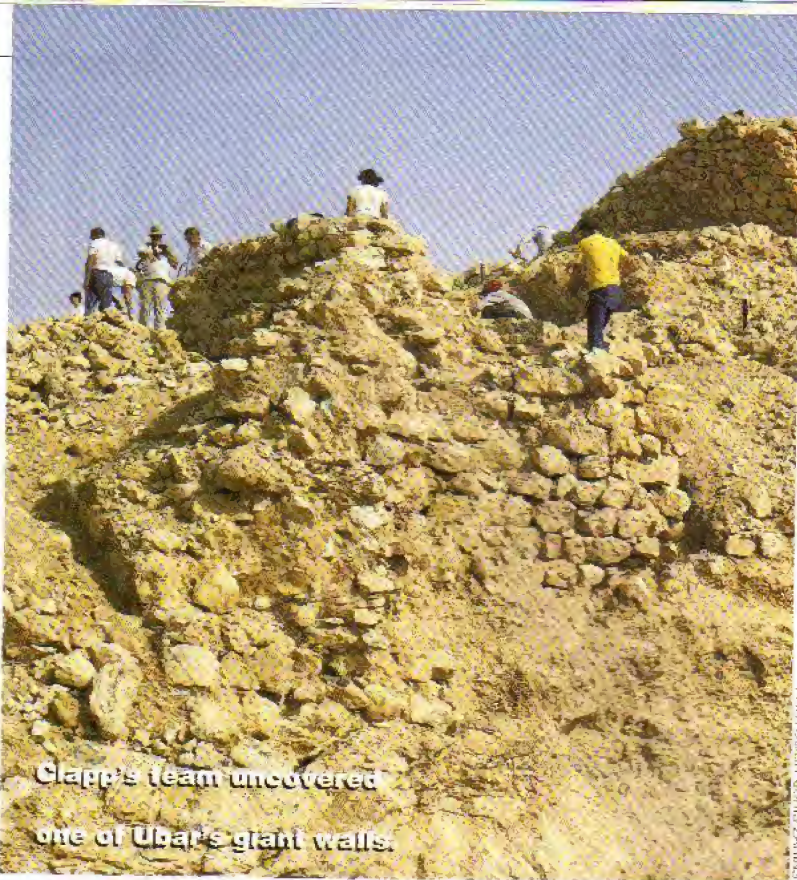
Then Clapp's team looked at the high-tech maps again and saw something amazing. Many of the caravan routes on the high-tech map came together on the same spot marked "Omani Marketplace" on Ptolemy's map. Two maps, made almost 2,000 years apart, pointed the team toward the same area!

In December 1991, Clapp arrived at the spot where, according to the maps, the caravans met. Clapp had a handheld device that could reveal objects below ground. It showed ruins under the sand! He

This is a modern satellite map of Oman. The place where Clapp dug up Ubar has been circled.



PHOTO COURTESY RONALD BLOM / JET PROPULSION LABORATORY



Clapp's team uncovered one of Ubar's giant walls.

PHOTOGRAPH BY JEFF ZABRIS

and his team started digging, trying not to get their hopes up. And then they found it! A tower buried in sand. They slowly unearthed a giant, eight-sided fortress. It had nine towers and many rooms. People had lived in this fortress 2,000 years ago. Outside its walls, the crew found buried remains of nearly 40 campsites. They seemed to be camping areas for caravans of traders.

More digging found shards, or pieces, of pottery from the ancient empires of Rome, Greece, China, Egypt and Syria. Diggers and scientists agree that people were on the site for about 5,000 years. Clapp and his team were excited as they continued to uncover more pieces of the past

that seemed to prove this was the lost city of Ubar.

"We started with this hopeless myth and then found seeds of truth," says Clapp. "Then we finally found the reality behind the myth." But is this excavation site really the once-great Ubar? Experts aren't totally convinced.

Is It or Isn't It?

Donald Whitcomb is an archeologist at the University of Chicago. He doubts that Clapp really discovered Ubar. "There's probably a grain of truth to this myth," he says. "But Ubar is described as a place with the walls all made of gold, and there are rubies and emeralds." No gold or precious stones have been found by Clapp.

"I don't know whether they discovered Ubar because I'm not sure whether Ubar

really existed," Whitcomb says.

If the city *is* Ubar, why did it suddenly vanish—as was written in the *Arabian Nights* and the *Koran*?

The answer is simple, say some experts. The city is built over a limestone cavern. Either the walls of the city became so heavy, they crashed down into the cavern. Or an earthquake caused most of the city to fall into the cavern.

Either way, the city, says Clapp, "would have taken down rooms full of stuff into the cavern." This is one of the reasons Clapp and his team want to explore the ruins for several more years.

Thousands of years ago, Shaddad Ibn Ad's dream of building a desert city came true. And now Clapp's dream of finding it has also come true. Which is just the way any good fairy tale should end. ♦



WRONG ISLAND

Dear CONTACT,

There was a slight mistake in your May '92 TNT Newsblast titled "Say Cheese." You claimed that the asteroid was 12 miles long by eight miles wide—and that it was the size of the Hawaiian island Oahu. According to *World Book Encyclopedia*, Oahu is 44 miles in length and 30 miles wide. The Hawaiian island with dimensions more similar to the asteroid is Kahoolawe. It is 11 miles by six miles.

Mike D. Long
Vista, CA

Well, Mike, that Newsblast is a lot like Swiss cheese: There are some holes in it! You're right. Kahoolawe is more along the size of the asteroid.

A BARBER'S DREAM

Dear CONTACT,

In your July/August issue there was a factoid that said humans can grow as much as seven miles of hair in one year. Is that true or is that a mistake?

Iris Pahler
Solvang, CA

Believe it or not, it's true. And at that rate, the average person will grow 525 miles of hair in a lifetime. What a hair-raising idea!

PUZZLING PUZZLE

Dear CONTACT,

I tried the comic, "A Race to the Races," in the July/August issue. But I got a number different from the number listed on the Did It page. I checked my answer with a calculator and even asked my older brother to try it. We always totaled another answer. Please help me get the correct answer.

Jake Lanier
San Antonio, TX

Whew! We had a tough time keeping count of all the letters we got about this, Jake. They kept adding up! You weren't the only one feeling totally puzzled. We think the trouble most of our readers had was when Ida was high-jumping. The time-clock at the start of her high-jump said 1:06. Afterwards, it showed 1:17. The time it took Ida to jump was 11 seconds. Eleven seconds was to be added to the total, not 1:06 or 1:17. The total time it took Ida was 19 minutes—so she made it to the start of the race just in time.

BUCKLE UP

Dear CONTACT,

I read the TNT Newsblast called "The Bus Stops Here" in your July/August issue. Two years ago, I was on a school bus that stopped short. Everyone, except the driver, who was wearing a seatbelt, got hurt. I tried everything to make seatbelts available on buses, but no one listened. It is a wonderful idea and I'm glad someone finally paid attention.

David Formanek
West Palm Beach, FL

We're glad, too! School bus riders won't have to worry about being taken for a bad ride much longer.

WE WANT MAIL!

Dear Readers,

We love hearing from you. Your questions and ideas help us make CONTACT a better magazine. So why not drop us a line? We can't answer every letter, but we do read them all. Send your mail to:

3-2-1 CONTACT: Letters
P.O. Box 40
Vernon, NJ 07462



THE TIME TEAM

Fool's Gold

By Curtis Segan

"You're a San Francisco 49ers fan, Sean?"

"Well, I like their quarter-back, Joe Montana."

Sean Nolan, wearing a 49ers T-shirt, was talking to Jenny Lopez in her house. They were about to go on a time trip.

Time traveling was easy, thanks to a device called a tachyon machine. It was Jenny's laser-powered science fair project. When Sean dropped it, the machine took on the power to send people to the past or future. The teens never knew where it would take them. But it always returned them to the time and place they left from.

Jenny took gum from its cloth pouch and popped it in her mouth. She put the pouch in her pocket, took out her tachyon machine and pressed the button. Instantly, the teens were standing on the side of a hill. Lots of ground had been torn up.

"Hey, yer standing on my claim!"

Walking towards them was a furious-looking man. He had a dirty beard, a dirty red flannel shirt and dirty pants rolled into his *really* dirty boots. His rough hands were wrapped around the handle of a shovel.

"Now skeedaddle off my land."

Sean got steamed. "Don't try to push us around! We just, ah, dropped in to visit friends around here."

The man snarled, "That's a yellow lie. No one just drops in on Sutter's land here in California. Yer shirt says yer a 49er. So you must be a gold prospector like me!"

Sean turned to consult with Jenny. "Huh?"

Jenny shook her head. "Did you sleep through American history? The 49ers were people who looked for gold in California. They were called 49ers because the gold rush began in 1849."

Sean's eyes lit up. "Is this really 1849?"

The man doubled over laughing. "You must be touched in the head. This is 1853!"

Golden Opportunity

"Excellent!" shouted Sean. "Have you found any gold today?"

The man reached into his pocket and pulled out a couple of tiny golden pebbles.

"That's not much."

The man said, "It ain't easy digging alone."

Sean became excited.

"How about if we helped you dig? You get to keep two-thirds of the gold, we'll keep one-third."

Jenny groaned, "Here we go again. Sean, you never stick your nose into a history book—but you're always sticking your nose into history."

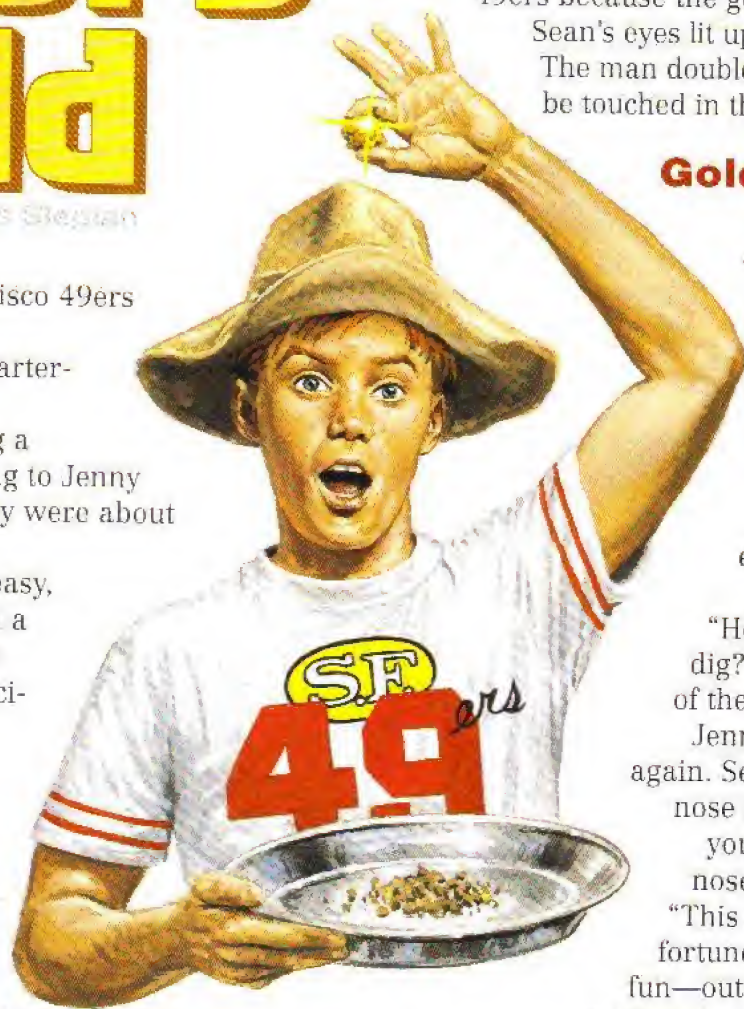
"This is the chance to make our fortune," Sean replied. "It'll be fun—out in the sun and fresh air, getting plenty of exercise."

Scrunching his face in thought, the man said, "There ain't a heap of girl prospectors out here. But I guess it's okay. So, put'er there, partners. My name's Jebediah Smith. You can call me Jeb."

They all shook hands.

Sometimes the people who searched for gold—called prospectors—found it on the ground. Or they dug it up. But mostly they panned for it in rivers, explained Jeb. "The river washes gold down from the mountains. It's in the dirt next to the stream. Now let's git to work!"

"This'll be a snap," said Sean, as Jeb handed him a dirty old frying pan with small holes



punched in the bottom. The trio went down to a stream that cut through the forest. Jeb shoveled some gravel from the bank into Sean's pan.

"Now what?" asked Sean.

"Now git in the river and fill up the pan with water!" snapped the crusty prospector.

"I have to get my jeans wet?" Sean reluctantly waded into the stream up to his knees. "Whoa! The water's freezing!"

He dipped the pan into the stream. Water and dissolved dirt dripped through the pan's holes. Sean didn't find any gold specks in the gravel.

"Time for a lunch break!" he shouted to Jeb.

"We ain't quitting 'til we hit gold."

Five hours later, Sean shouted, "Gold! I've

found gold!" He stumbled out of the stream, his hands freezing, his back aching.

"Wowee!" Sean yelled. "We're rich!"

Jeb silently looked at the small nugget in the bottom of the pan. "That's fool's gold. A mineral called pyrite. Looks like gold but it ain't."

"Maybe we should dig somewhere else," suggested Jenny.

"Nah, this area is crowded with claims, cause rumor has it there's plenty of gold."

"How do you stake a claim?" asked Jenny.

Jeb responded, "Why, anywhere you lay yer pick and shovel is yer claim. Then, no one but you can dig for 50 feet around it."

The next morning, the trio panned for gold again. Backbreaking hours later, they hadn't found anything. Sean and Jenny had never worked so hard in their lives.

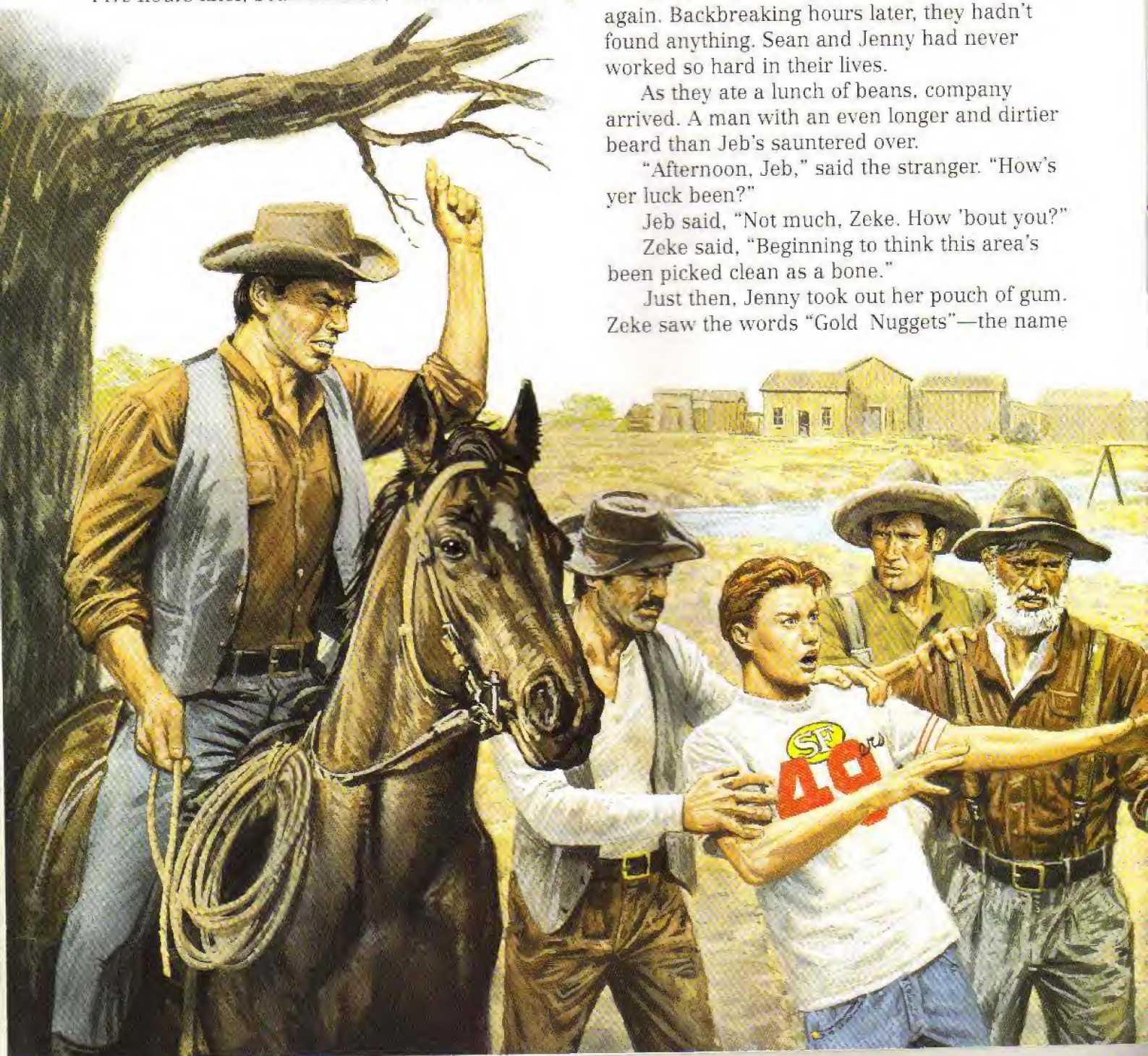
As they ate a lunch of beans, company arrived. A man with an even longer and dirtier beard than Jeb's sauntered over.

"Afternoon, Jeb," said the stranger. "How's yer luck been?"

Jeb said, "Not much, Zeke. How 'bout you?"

Zeke said, "Beginning to think this area's been picked clean as a bone."

Just then, Jenny took out her pouch of gum. Zeke saw the words "Gold Nuggets"—the name



of the gum—printed on the pouch. He didn't say anything, but nodded goodbye and left.

Later, Jenny asked Sean how much longer he wanted to stay in the world of 1853.

"Until we become rich!" he said firmly.

After only one day, Jenny was almost as dirty as Jeb. Her arms were sore and fingers blistered from shoveling dirt.

"Sean," she said, "I'm tired. Let's go. You're never going to find gold. And even if you do, how are you going to explain it to your parents?"

Sean stared at his water-logged sneakers. Jenny was right. Sometimes he did things without thinking them through. "Well, alright. Maybe we should say goodbye to Jeb and go home."

At that moment, Zeke and a half dozen other men rushed into Jeb's camp.

Chew This Over

"There's the dirty rotten scoundrel," cried Zeke, pointing at Jenny. "She stole my gold!"

"You've flipped," said Jenny angrily. "I never took anything from you."

"I reckon you got a pouch with the words 'Gold Nuggets' on it."

The men grabbed her. "Yep, she's got it."

Zeke's lips curled in a sneer. "Jeb and that boy helped her steal it from me."

Several men held Jeb and Sean. Their leader was a man named Stoddard. With no police

around, prospectors chose their own judges to settle arguments. And Stoddard gave his verdict: "I guess we should

string 'em up."

Zeke whispered to a friend, "When I saw that pouch full of gold nuggets, I knew they'd made a big strike. With them hung, the claim is mine!"

Jenny started laughing. "What's so funny?" barked Stoddard.

"Open up the pouch, and you'll see the gold I supposedly stole from Zeke."

Stoddard pulled from the pouch a handful of yellow-colored bits of bubble gum.

Zeke turned pale. "Maybe I made a mistake."

"Maybe we should hang *you*," said Stoddard. "Now git off this mountain and never come back."

Later, the teens told Jeb they were leaving. He pleaded for them to stay one more day: "I feel lucky." The teens agreed.

Jeb *was* lucky. The next morning, he found a gold nugget the size of a jawbreaker. All three danced for joy. Jeb carefully broke the gold into two pieces. The teens got one-third of the nugget. That afternoon, they rode on Jeb's mules into the nearby city of San Francisco to sell the gold.

Jeb exchanged his gold for \$2,000. But the shopkeepers knew that prospectors had gold. So they raised their prices. An egg was a dollar, a barrel of flour cost 400 dollars. By the time Jeb paid for food, clothes and equipment for the next few months, he had no money left.

Frontier Jean-ius

"You take our share," said Jenny, jabbing Sean in the ribs. "After all, you found the gold."

Sean reluctantly handed over his chunk of gold to Jeb. "Bummer," he said sadly.

Jeb waved goodbye and started back to Sutter's land—to try to make his fortune.

As the teens stood watching, a man approached. "Say," he said, "I like your pants. What do you call them?"

"Blue jeans," said Sean.

The man said, "I've been meaning to use up this big supply of canvas I have. Maybe I can make them into pants like yours. I'd sell them to prospectors. There could be some money in it."

"What's your name?" asked Jenny.

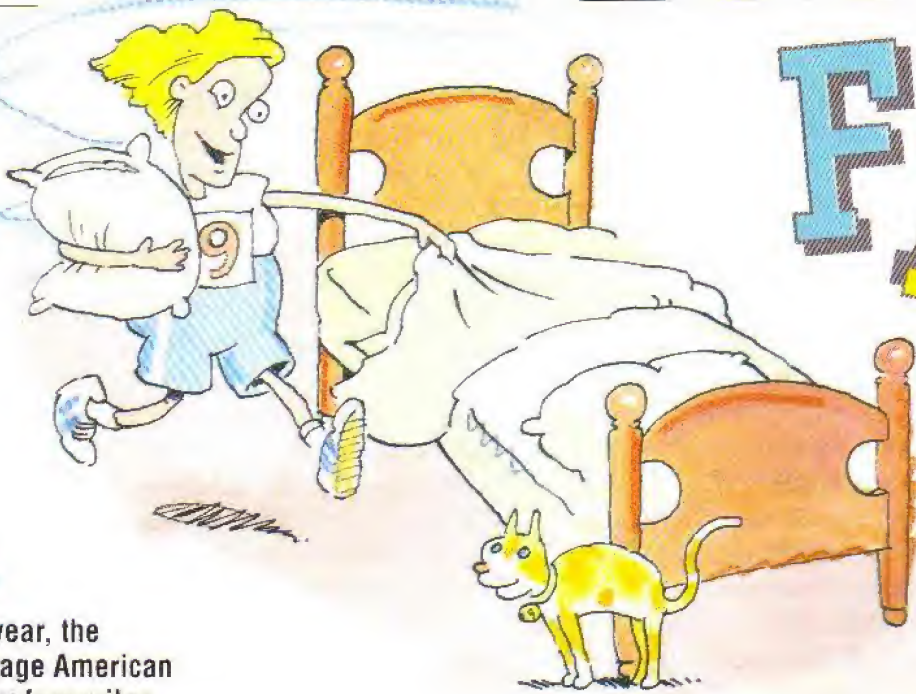
"Strauss," said the man. "Levi Strauss."

After he left, Jenny turned to Sean. "That man must be the guy who invented Levi's jeans."

Sean shook his head. "He's one person here who really struck it rich!" ♦



FACT



▶ In a year, the average American walks four miles making his or her bed.

▼ The fastest-moving muscle in the human body is the one that opens and closes the eyelid.



Olds

A cockroach can sometimes survive without a head for several weeks.



More types of fish swim in Brazil's Amazon River than in the entire Atlantic Ocean.



Ostriches can run up to 44 mph.

ILLUSTRATIONS BY GIANFRANCO PIRELLA

Triton, a moon of Neptune, is the coldest known place in our solar system. Its surface is 391 degrees F. below zero.



BASIC TRAINING

Programs For Your Computer

BUG EATER

For IBM and Apple II computers

Okay, you've finally decided you can stomach bugs. Now comes the hard part: catching the pesky little things.

In this program, the A and D keys move you left and right. The W and S keys move you up and down. You're the O, and all the bugs are B's. Try to catch the bugs as quickly as possible.

If your computer has a 40-column screen, set SW=40 in line 10. To slow down the program, set SP equal to a higher number in line 10. If you're running this program on an Apple II, leave out the RANDOMIZE (TIMER) command in line 10.

```
10 SW=80 : SP=50 :  
  RANDOMIZE (TIMER)  
20 DIM BG(10),BX(10),  
  BY(10)  
30 FOR X=1 TO 10  
40 BG(X)=1  
50 BX(X)=INT(RND(1)*SW)+1  
60 BY(X)=INT(RND(1)*23)+1  
70 NEXT  
80 SC=0 : FL=0 : MX=INT  
  (SW/2) : MY=12  
90 GOSUB 430  
100 IF FL=1 THEN 240  
110 FOR X=1 TO 10
```

```
120 IF BG(X)=0 THEN 230  
130 PX=BX(X) : PY=BY(X) :  
  GOSUB 420 : PRINT  
  CHR$(32);  
140 IF RND(1)>.5 THEN  
  BX(X)=BX(X)+1 : GOTO 160  
150 BX(X)=BX(X)-1  
160 IF BX(X)>SW THEN  
  BX(X)=SW  
170 IF BX(X)<1 THEN BX(X)=1  
180 IF RND(1)>.5 THEN  
  BY(X)=BY(X)+1 : GOTO 200  
190 BY(X)=BY(X)-1  
200 IF BY(X)>23 THEN  
  BY(X)=23  
210 IF BY(X)<1 THEN BY(X)=1  
220 PX=BX(X) : PY=BY(X) :  
  GOSUB 420 : PRINT "B";  
230 NEXT  
240 PX=MX : PY=MY : GOSUB  
  420 : PRINT CHR$(32);  
250 GOSUB 440 : IF B$=""  
  THEN 350  
260 IF B$="Q" OR B$="q"  
  THEN END  
270 IF B$="A" OR B$="a" THEN  
  MX=MX-1  
280 IF B$="D" OR B$="d" THEN  
  MX=MX+1  
290 IF B$="W" OR B$="w"  
  THEN MY=MY-1  
300 IF B$="S" OR B$="s" THEN  
  MY=MY+1  
310 IF MX>SW THEN MX=SW  
320 IF MX<1 THEN MX=1  
330 IF MY>23 THEN MY=23  
340 IF MY<1 THEN MY=1  
350 PX=MX : PY=MY :  
  GOSUB 420 : PRINT "O";  
360 FOR X=1 TO 10 : IF
```

APPLE II ENDING:

```
420 HTAB(PX) :  
  VTAB(PY) : RETURN  
430 HOME : RETURN  
440 X = PEEK(49152) : IF X<128  
  THEN B$ = "" : RETURN  
450 B$ = CHR$(X - 128)  
460 X = PEEK(49168) : RETURN  
470 PRINT CHR$(7) : RETURN
```

IBM ENDING:

```
420 LOCATE PY, PX : RETURN  
430 CLS : RETURN  
440 B$ = INKEY$  
450 FOR X = 1 TO 15 : O$ =  
  INKEY$ : NEXT  
460 RETURN  
470 SOUND 440, 1 : RETURN
```

SEND US YOUR PROGRAMS

If you've written a program you'd like us to print, send it in. If we like it, we'll print it and send you \$25. Include a note telling us your name, address, age, T-shirt size and type of computer.

All programs must be your own original work. We cannot return programs. Please do not send disks.

Send your programs to:



THE SLIPPED Disk SHOW

Hey there, byte buddies! I'm Slipped Disk, world-famous computer expert and floppy disk jockey. And this is the Slipped Disk Show. Our motto is: "If computer questions you must ask, to find the answers is our task."

Actually, that motto was sent in by **Kristel Noon** of St. Clair, MN. Thanks, Kristel, for that great motto.

It's time for Floppy—my assistant and dog—to get to work and answer a couple of computer-type questions. I've got one right here from **Jeff Horn** of Lincoln, NE. Jeff wants to know:

"My computer has an undelete command. How does that work?"

Jeff, I hope it works better than Floppy does. All he wants to do anymore is sit around writing stupid mottos like: "An answer for every question, right or wrong." But that's not what you want to know, is it?

Before you can undelete something, you first have to delete it. (Delete means to get rid of or erase an item.) So, for example, a word processing program might let you cut or delete

a sentence. But suppose you cut a sentence and then a moment later you decide you've erased the most brilliant sentence ever written. What can you do? That's where undelete comes in.

When you delete something in a word processing program, the computer doesn't throw it away. It makes a copy somewhere in its memory. So if you change your mind, you can undelete

and put it back. Usually the program will save whatever you've cut until the next time you cut something. Then it needs the undelete space for the text you cut most recently.

By the way, Jeff, Floppy always deletes my answers to questions, but I always manage to undelete them in time for the show.

And speaking of questions, here's another one,

from **Angela Krempel**, 13, and her father, **Jerold**, of Binghamton, NY. They ask:

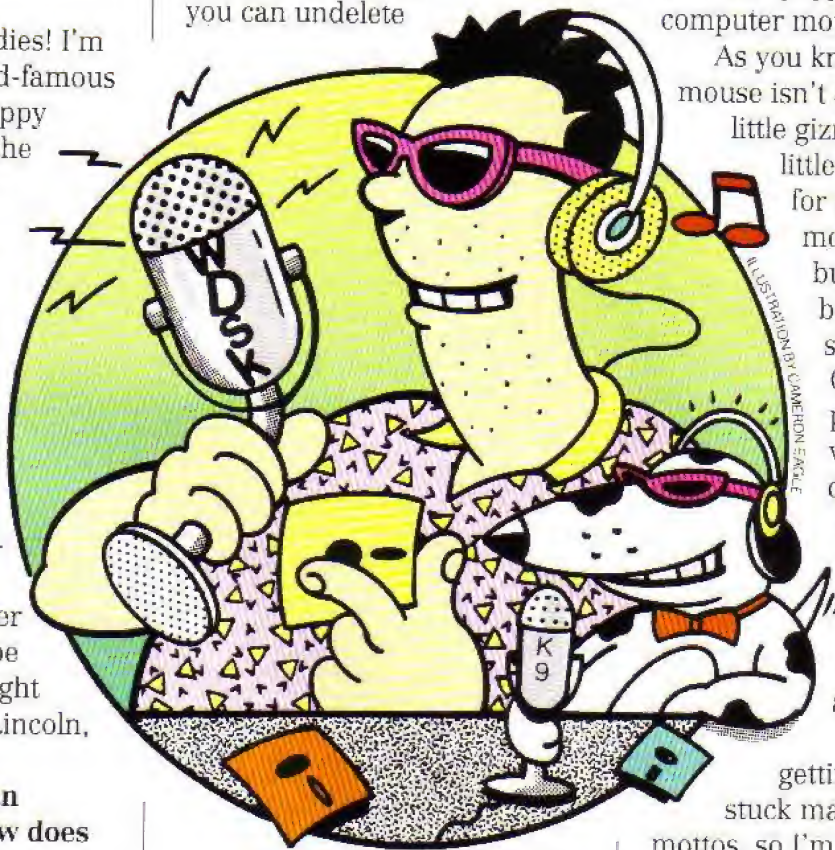
"Someone always leaves crumbs on our mousepad. What do you feed your mouse?"

Well, Angela and Jerold, I don't have a mouse because Floppy won't let me. He says they make too much noise when they run around in those little exercise wheels. Besides, they leave their footprints all over the keyboard when they type. But you mean a computer mouse, right?

As you know, a computer mouse isn't a mouse at all. It's a little gizmo that looks like a little box with a long wire for a tail. A computer mouse has one or two buttons on top and a ball underneath that it slides around on. Crumbs and computer mice don't mix very well because the crumbs get into the ball socket and it can get stuck. Luckily, it's easy to clean a computer mouse—but ask an adult to do it for you.

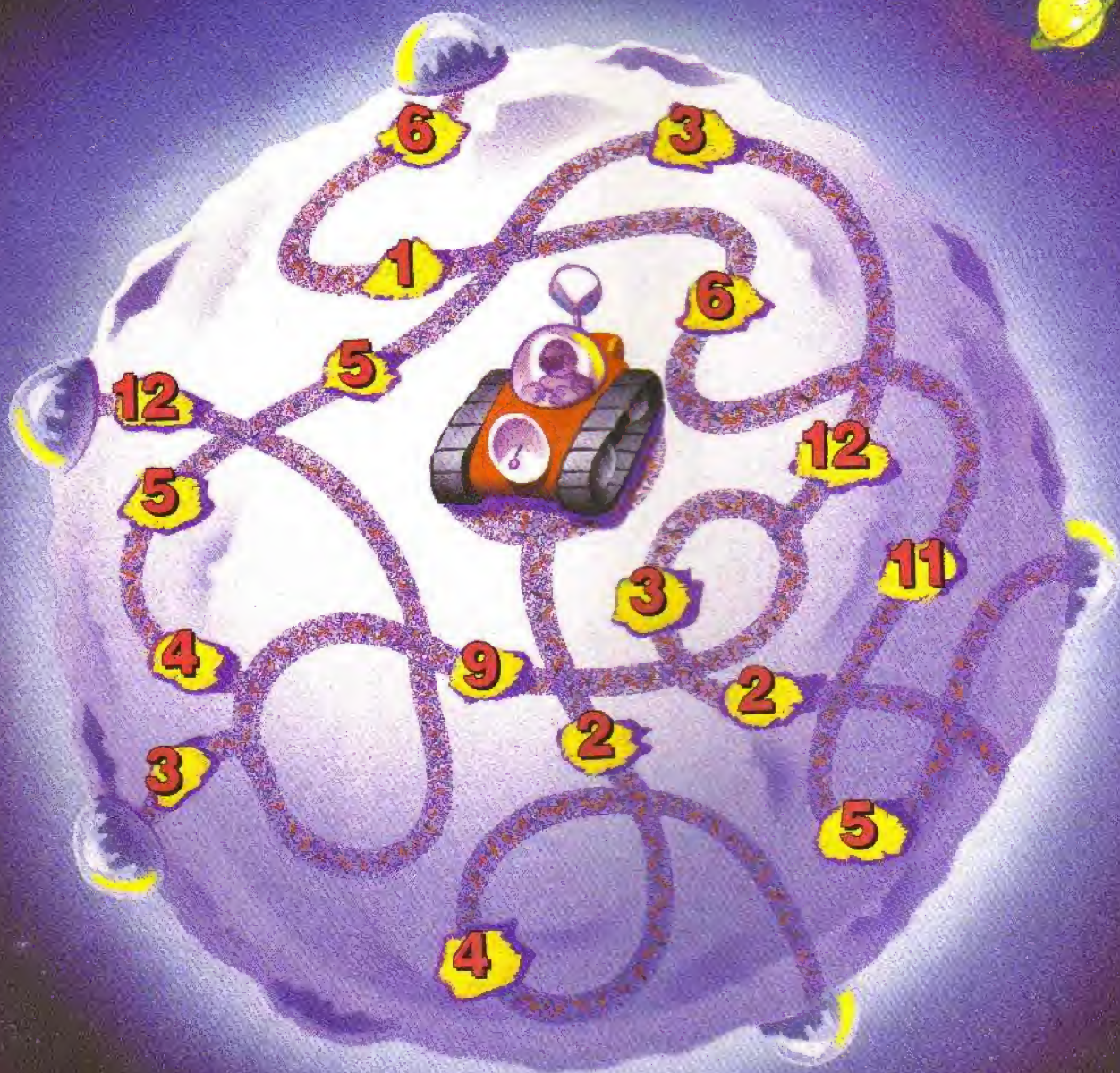
And speaking of getting stuck, Floppy is stuck making up more silly mottos, so I'm going to stop him. Meanwhile, if you're stuck with a computer question and you need an answer, send it to me and Floppy at:

THE SLIPPED DISK SHOW
3-2-1 CONTACT
1 LINCOLN PLAZA
NEW YORK, N.Y. 10023



Woman in the Moon

This astronaut's mission is to gather moon rocks on the way back to one of the five moon bases. Can you lead her down the path that will allow her to pick up the most moon rocks before reaching a base? To figure out how many she has, add up the numbers on the rocks. You can only go down a path once—no backtracking allowed!



CUT PUZZLES

By Beth Chayet

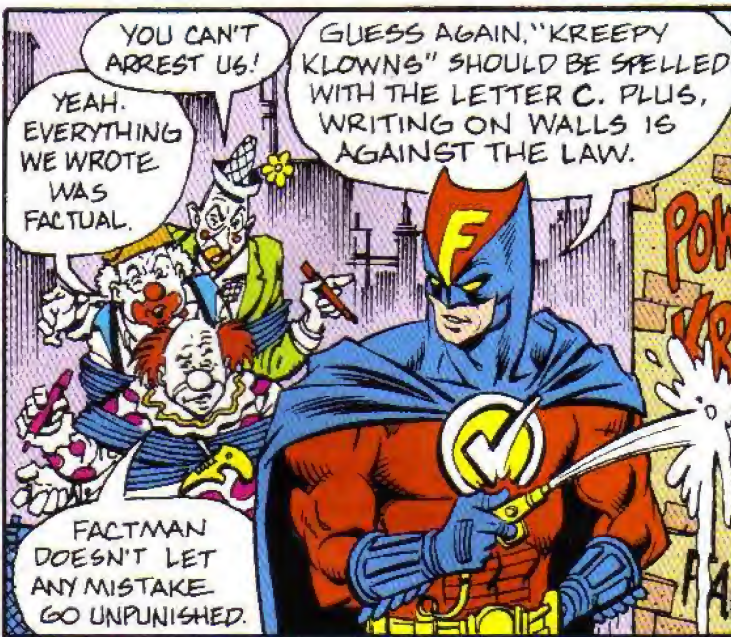
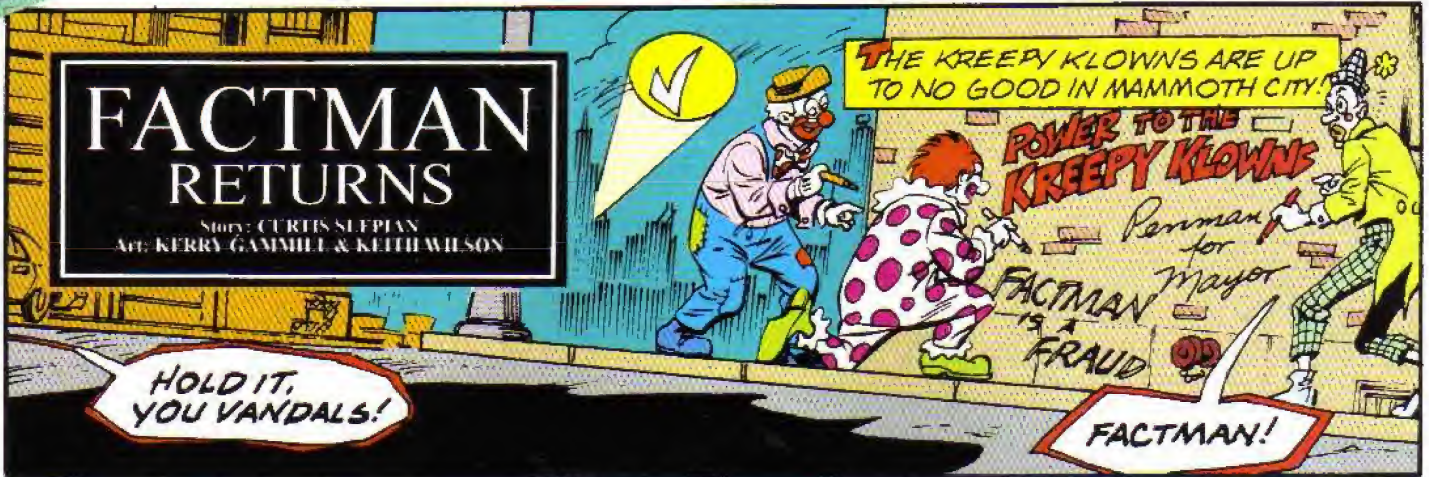


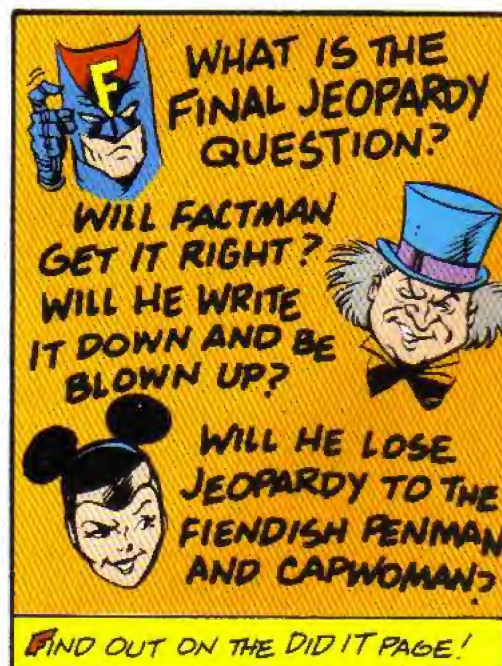
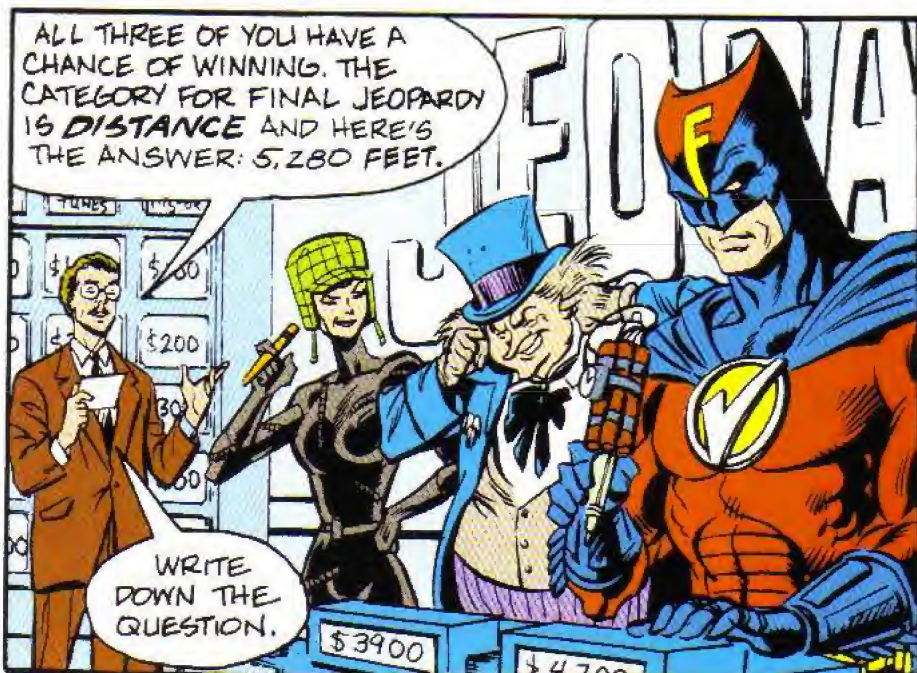
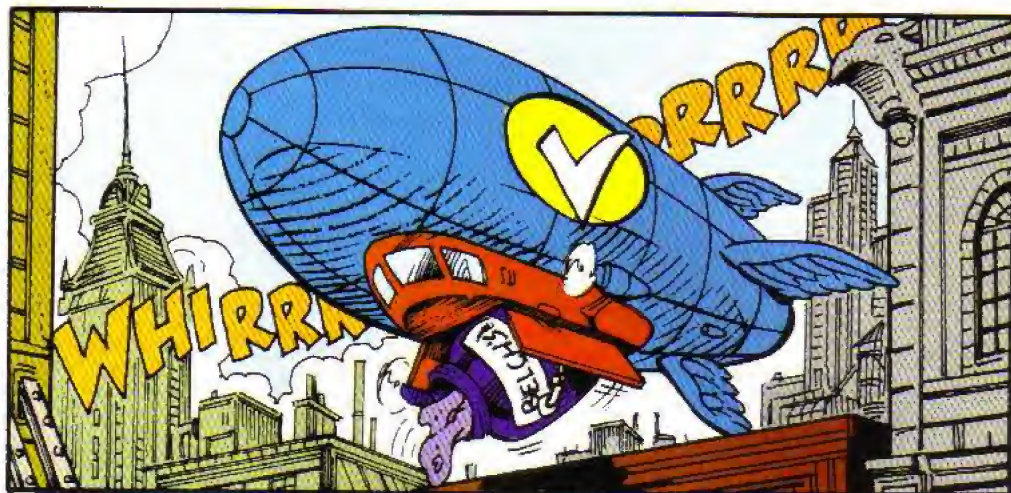
Out of Orbit

Saturn, Venus, Earth and Mars are orbiting around the sun. Take one of the planetary pictures (1, 2 or 3) and place it in the solar system with the question marks to complete the orbital pattern.

Space Add-venture

Can you choose four numbers from these stellar objects that total 100? (You may only use each number once.)





A Ghostwriter

SCRAMBLED LETTER

Alex wrote a letter to Tina inviting her over for Thanksgiving dinner. They're just two of the young stars on a cool new TV show called *Ghostwriter*. But as Alex was struggling to get the note away from his dog, it got torn into the pieces you see on this page. Can you put the letter back together so it makes sense? The answer is on the Did It page.

Please let me know if
Otherwise, catch you on
Later dude,
Alex

P.S. Maybe we should
pie. That's Ghost
(HA! HA! HA!)

my house for Thanks-
vited Jamal, Lenni
6:30. Mom is mak-
ing. We'll also have
beans and carrots. You know
sauce, corn, sweet potato

I'll ask Lenni to
maybe we'll rent a vi
all hanging together
fun to do. But we'll
move.

you'll be a no show.
Thursday!

Dear Tina,

Please come over to
giving dinner. I've in
and Rob. Dinner will be at
ing her scrumptious stuff
turkey, cranberry
pie, peas, green
my mom, she's al
Do you think you can
triple chocolate

make a Booberry
writer's favorite dessert.

ways pushing those veggies.
make your delicious
treat? It's my fave.
bring over her new CDs, or
deo. I'm sure once we're
we'll think of something
probably be too stuffed to

Watch *Ghostwriter*,

a new TV show about
kids, mysteries—and a
ghost! It airs Sundays, at 6
p.m. on PBS. Check your
local TV listings for exact
time and date in your
area—and get with
the program!

30 Giant Collector Cards

for only

99¢

The Most Incredible Dream Machines on Earth!

Collect the Giant Cards that put you into real-life action you've only dreamed about — the high drama of aerial combat ... the blood-boiling excitement of the Indy 500 ... the brute force of tank warfare.

Climb into battle-tested combat fighters, bombers and attack choppers — the P-40, the B1-B, the AH64 Apache ... Test drive the super powerful racers, dragsters and dream machines — the Ferrari F40, Lambo Countach and the 2,700 hp Swamp Rat ... Discover high-tech solar cars that glide across an entire continent without a drop of gas, corporate starships, sub-sonic trains and much, much more.

If you're tough enough for this explosive, high-energy action, we've got 30 Wheels and Wings® Cards that put you in the thick of it.

Take 30 Big Ones for 99 Pennies!

Jumbo Wheels and Wings Cards bring you more than you ever thought possible — bar none! Each of these huge 7" x 10" full-color cards packs a massive amount of information, color photos, fascinating details and first person accounts. Collecting a Wheels and Wings card is the next best thing to owning a sports car, war-plane or dragster! And the price — just 99¢* for all 30 cards — less than 3 1/2 cents each!

FREE Poster, Too!

To reserve your set of 30 cards, rush us the attached card today. When we get it, we'll rush your cards, plus we'll throw in a big 17" x 22" Lamborghini Wall Poster — absolutely FREE! Remember there's no obligation to buy and no money to send now! That's a deal that can't be beat!

* Sales tax added where applicable. All orders are subject to our credit approval.

(With no obligation to buy more—ever!)



Wheels and Wings®
30 Giant Cards for 99¢

Plus FREE
Lamborghini
Poster!

☐ **YES**, please rush my Wheels and Wings® Cards for just 99¢. Also include my Free jumbo poster. I will pay only after receiving my cards. **Send no money now!**

Name _____ (Please Print) ☐ Male ☐ Female

Address _____ Apt. _____

City _____ State _____ Zip _____

Telephone (_____) _____ area code Birth Date Mo. _____ Day _____ Yr. _____

Parent Signature _____ (If under 18, Parent Signature Required.) A/WW2250 D3NZ-043-3

Wheels and Wings is a federally registered trademark of Newfield Publications, Inc.

☒ No Obligation to Buy Anything Else...Ever

☒ Only 99¢ (No Hidden or Extra Charges)

☒ Send No Money Now

☒ Available by Mail Only

Mail to:

NEWFIELD
PUBLICATIONS

4343 Equity Drive, P.O. Box 16615, Columbus OH 43216-8615



BONKERS OVER BUGS

It's the Entomological Society's annual birthday bash. Chef Bugardee is preparing the bug banquet. But she's really bugged out. The ingredients in the Crispy Critters recipe are written in code. And she doesn't know how to solve it.

Help her decode the ingredients spelled in CAPITALS. Replace each letter in the coded word with the letter that comes right before it in the alphabet. For example: H becomes G.

The answers are cooking on the Did It page.

5-10 HSBTTIPQQFST

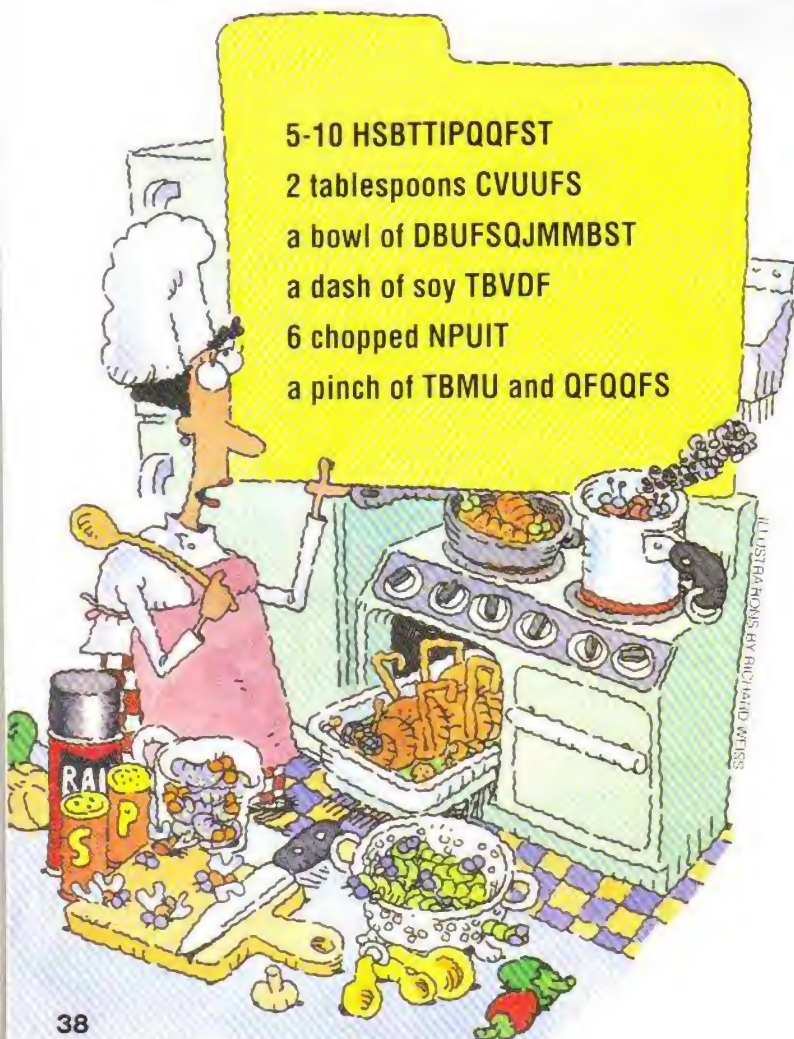
2 tablespoons CVUUF

a bowl of DBUFSQJMMBST

a dash of soy TBVDF

6 chopped NPUIT

a pinch of TBMU and QFQQFS



By Beth Chayet

DOWN UNDER

An Australian Animal Word Search

Crocodile Dumbdee is searching for some wild animals in the land "Down Under." See if you can help him find the 15 animals hidden in the word search below. Words go up, down, across, backwards and diagonally. The leftover letters will spell out the name of Australia's capital city.

Search the Did It page for the answer.

Koala

Emu

Perenty

Wallaby

Glider

Dingo

Cuscus

Lorikeet

Dugong

Bandicoot

Cassowary

Quokka

Wombat

Kangaroo

Kookaburra

Y	R	A	W	O	S	S	A	C	A
T	A	B	M	O	W	C	D	R	S
O	T	A	A	N	B	I	R	U	R
O	E	N	Q	E	N	U	C	E	P
R	E	D	U	G	B	S	D	E	R
A	K	I	O	A	U	I	R	R	A
G	I	C	K	C	L	E	U	M	E
N	R	O	K	G	N	O	G	U	D
A	O	O	A	T	K	O	A	L	A
K	L	T	Y	B	A	L	L	A	W

CRAZY CARS

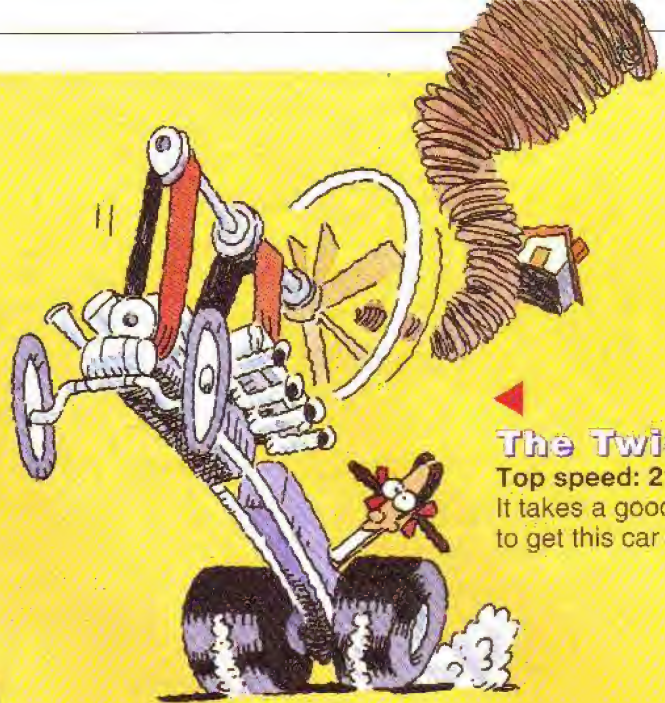
These wacky cars are all revved up for the Ridiculous Road Rally. Can you figure out which one is going to win the race?

Look at each car and read its description. Then read the clues below. The car that fits all three clues will be the winner.

Zoom to the Did It page for the answer.

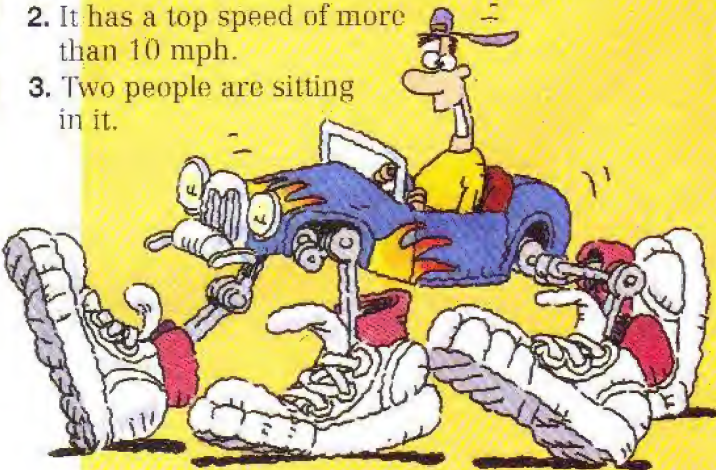
CLUES:

1. The winning car has at least two wheels.
2. It has a top speed of more than 10 mph.
3. Two people are sitting in it.



The Twister

Top speed: 21 mph.
It takes a good tornado to get this car going.



Groove Machine

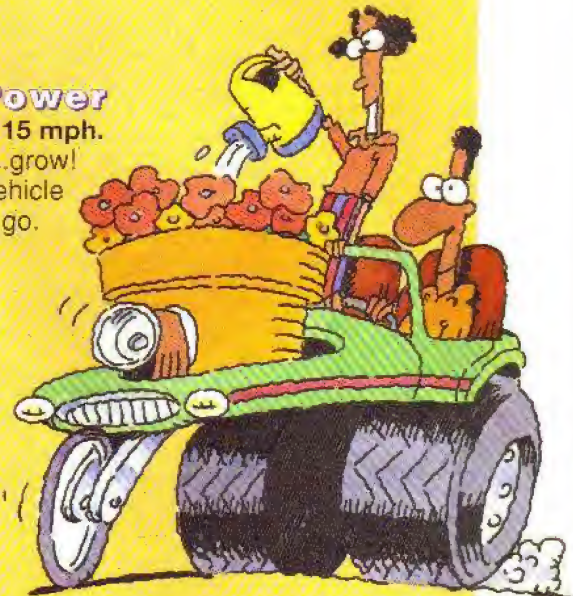
Top speed: 13 mph.

This dancing machine is designed to move like Paula Abdul. It has high-top sneakers instead of wheels.

Petal Power

Top speed: 15 mph.

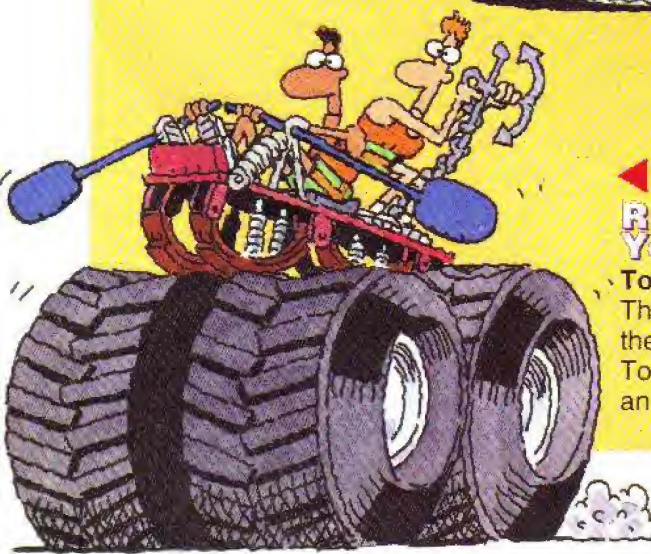
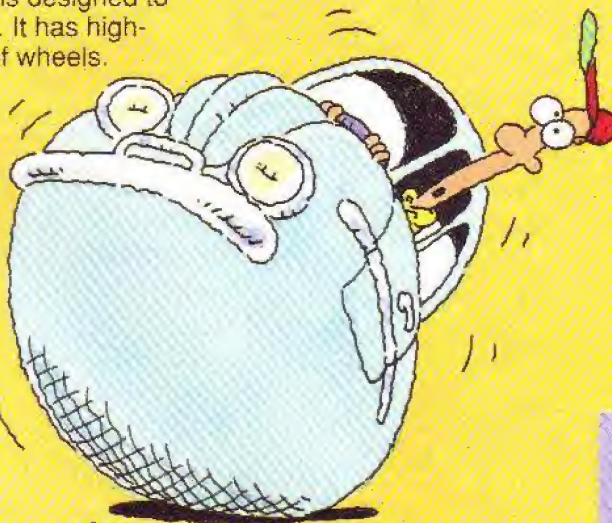
Ready...set...grow!
Water this vehicle and watch it go.



Scrambled Egg

Top speed: 8 mph.

It rolls. It wobbles.
But this egg-shaped car never falls over.



Row, Row Your Car

Top speed: 3 mph.

The faster you row, the faster you go.
To stop, you throw an anchor!

Enter Our Crazy Car Contest:

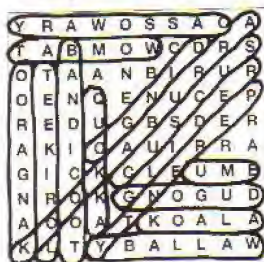
Draw your own, original crazy car! It must be drawn on paper no bigger than this page. Name your car, and give a two-line description of how it runs. Include your name, age and address.

We'll choose one Grand Prize winner from all the entries. He or she will win a Kodak Sketch Case. Five runners-up will win CONTACT T-shirts. Winners will be judged on creativity. Entries must be mailed by December 1, 1992. Send to:

Crazy Car Contest
3-2-1 Contact Magazine
P.O. Box 40
Vernon, NJ 07462

Did it

DOWN UNDER
Australia's capital
city: Canberra



GHOSTWRITER

Dear Tina,

Please come over to my house for Thanksgiving dinner. I've invited Jamal, Lenni and Rob. Dinner will be at 6:30. Mom is making her scrumptious stuffing. We'll also have turkey, cranberry sauce, corn, sweet potato pie, peas, green beans and carrots. You know my mom, she's always pushing those veggies. Do you think you can make your delicious triple chocolate treat? It's my fave.

I'll ask Lenni to bring over her new CDs, or maybe we'll rent a video. I'm sure once we're all hanging together we'll think of something fun to do. But we'll probably be too stuffed to move.

Please let me know if you'll be a no show. Otherwise, catch you on Thursday!
Later dude,
Alex

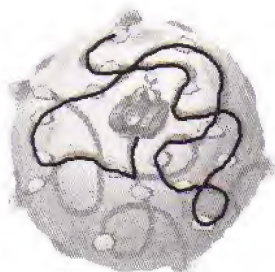
P.S. Maybe we should make a Scooberry pie. That's Ghostwriter's favorite dessert.
(HA! HA! HA!)

OUT OF ORBIT

Picture number three completes the pattern.

WOMAN IN THE MOON

The greatest number of moon rocks she can collect is 72.



SPACE ADD-VENTURE

$15+18+23+44=100$.

BONKERS OVER BUGS

Grasshoppers, butter, caterpillars, sauce, moths, salt and pepper.

CRAZY CARS

The winning car is Petal Power.

FACTMAN RETURNS

The correct answer is, "What is the number of feet in a mile?" At the last second, Factman realized his marker pen was a bomb. He changed it for a normal pen from his utility belt. All three knew the answer, but only Factman wrote it in question form. So he won *Jeopardy!*

NEXT MONTH

For a real holiday treat, open up your December issue of CONTACT:

SCIENCE DAREDEVIL

Meet Terry Fredeking, a real-life Indiana Jones. But his adventures are even more dangerous than Indy's. To help medical researchers, he snares vampire bats, giant leeches and deadly black widow spiders! Follow his trail as he tracks down deadly creatures.

PHOTOGRAPHER TO THE STARS

Hubble may still have some trouble, but it's taking great photos. Quasars, supernovas and a storm on Saturn are just some of the stellar performers that have posed for Hubble's camera. Check out these super snapshots of the universe.

BRRR! THEY'RE BEARS

If you're looking for polar bears, go to Churchill. This tiny Canadian town is the polar bear capital of the world. It's also where scientists—and tourists—come to get the bear facts. Join them in their search for these not-so-gentle giants of the North.

PLUS

FACTOIDS

AND MUCH, MUCH MORE!

HOLIDAY FUN

**Gifts that keep
on giving for the
entire year...**

**from
Children's
Television
Workshop**

Sesame Street Magazine—Ages 2-6
Big Bird and all his friends bring poems, stories, games and other learning activities in ten terrific issues a year... Plus with every issue of Sesame Street Magazine there's a 48 page Parents' Guide as a Bonus for You! It's loaded with helpful articles on child development and gives you ideas on how to increase your child's participation with each issue. 10 issues (1 yr.) for just \$16.97, or 20 issues (2 yrs.) for just \$24.97

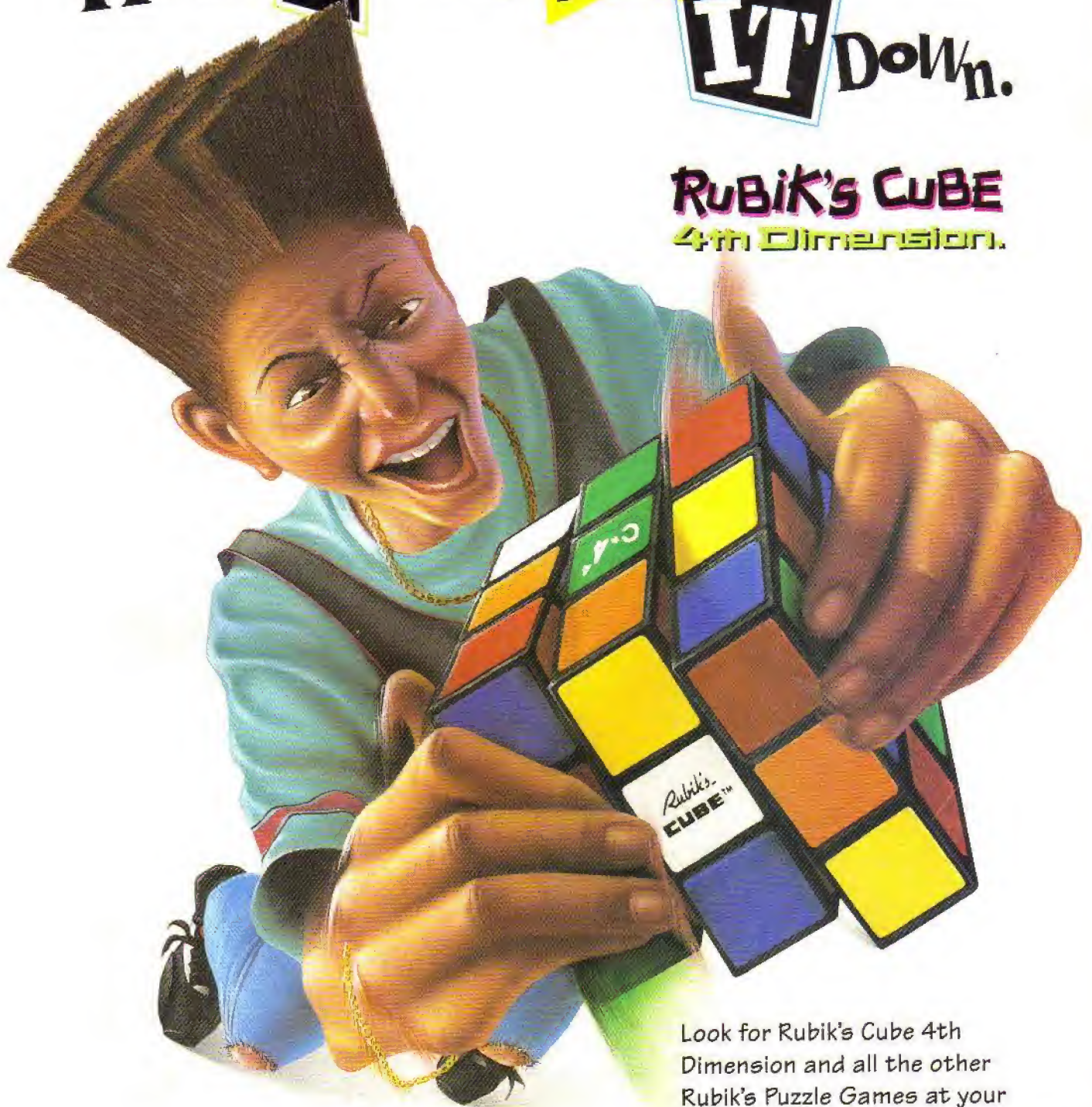
Kid City Magazine—Ages 6-10
Perfect for Sesame Street Graduates!
It's amusing, playful, absorbing and educational for beginning and young readers ages 6 to 10. Give ten colorful issues, filled with stories, puzzles, games, cut-outs, jokes—and sunny smiles for just \$15.97—or keep the fun coming for 2 years (20 issues) for just \$23.97!

3-2-1 Contact—Ages 8-12
Entertaining and informative adventures in science and nature for ages 8 to 12. Each of CONTACT's ten big issues is packed with puzzles, projects, experiments and colorful feature stories. PLUS computer programming, software and book reviews, and challenging Square One TV math puzzles and games. A fun involving way to learn and yours to give for just \$16.97 for ten issues (1 yr.) or \$24.97 for 20 issues (2 yrs.).

If the order card is missing, please send your order, along with a check made out to the desired magazine, to:
Children's Television Workshop
One Lincoln Plaza
New York, NY 10023
Attn: Magazine Group

The **HARDEST** part is Putting **IT** Down.

RUBIK'S CUBE
4th Dimension.



Look for Rubik's Cube 4th Dimension and all the other Rubik's Puzzle Games at your favorite store. Or order them by phone, at 1-800-236-7123.



You can never get enough of a Rubik's.

© Matchbox International Limited. Rubik's™ is a trademark of Seven Towns Ltd. © 1992 Western Publishing Company, Inc.

WARNING: This Cube Could
Be Habit Forming.